

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

UNITED STATES
DEPARTMENT OF AGRICULTURE
LIBRARY



1.9422
BOOK NUMBER A2Se4
518211

1.9422
A25A4

^A Selected references
on YEAST

By C. D. Stephany and Harry W. von Loese^C_^ke

WAR FOOD ADMINISTRATION
Office of Marketing Services
Washington, D. C.
January 1945

21
USDA
LIB

6520/8
WYN
213-14

UNITED STATES
DEPARTMENT OF AGRICULTURE
LIBRARY



BOOK NUMBER 1,9422
A2Se4

518211

GPO 8-7871

During the present war period, production of compressed, active dry, feed, and food yeasts has been greatly expanded. Production will no doubt continue into the immediate post-war period, but on a reduced scale for some forms of yeast.

These references have been compiled because of expressions of interest from manufacturers of yeast and those dealing with the utilization of yeast. The references are, therefore, directed more to the yeast manufacturer than to the distiller, brewer, or wine maker. It is believed that the references will be of service not only during the present war period, but in the post-war period when the problems of retrenchment and reconversion will in many cases call for intensive research.

A list of journals is appended (p. 311), and the Union List of Serials, available in practically all libraries holding scientific periodicals, will indicate in which libraries in the United States these journals are on file. In a number of instances the localities will be found to differ from those in the Union List of Serials since it has been the endeavor to give in this list the latest localities so far as available, and former localities are not included. A few journals too recent to be included in the Union List of Serials, as well as those systematically excluded, such as Experiment Stations, are presumed to be on hand in all larger libraries. In cases of scarcity of distribution or in cases of languages not generally known, such as Finnish, Hungarian, and Jugoslavian, reference has been made to the Chemical Abstracts.

For subject index, see page 307.

ACB
311

51011

Action of actinic and Roentgen rays.

The sensitizing action of fluorescent material upon yeast and yeast juice. V. Tappeiner. *Biochem. Z.* 8, 47-60 (1908).

The influence of radioactive emanations on yeasts and alcoholic fermentation. G. Jacquemin and G. Giurel. *Vie agr. rurale* 3, 232 (1914); *Mo. Bull. Agr. Intelligence* 5, 1505 (1914).

Action of ultraviolet rays upon alcoholic fermentation. Romolo and Remo de Fazi. *Ann. chim. applicata* 4, 301-29 (1915).

Action of ultraviolet rays on the alcoholic fermentation of India fig must. Romolo and Remo de Fazi. *Ann. chim. applicata* 6, 221-46 (1916).

Action of ultraviolet rays upon alcoholic fermentation of the must of India fig. Romolo and Remo de Fazi. *Ann. chim. applicata* 8, 93-101 (1917).

The action of radium emanation on the vitamins of yeast. Kanematsu Sugiura and Stanley R. Benedict. *J. Biol. Chem.* 39, 421-33 (1919).

Action of ultraviolet rays on Saccharomycetes. B. Feuer and F. W. Tanner. *J. Ind. Eng. Chem.* 13, 265-266 (1921).

The action of ultraviolet rays on the Saccharomycetes. R. de Fazi. *J. Ind. Eng. Chem.* 13, 265 (1921); Reply. B. Feuer and F. W. Tanner. *Ibid.* 265-6.

Action of ultraviolet rays upon Saccharomyces cerevisiae. Romolo and Remo de Fazi. *Giom. chim. ind. applicata* 4, 463-4 (1922).

Action of ultraviolet rays on fermentation and yeast. P. Lindner. *Wochschr. Brau.* 39, 166-7 (1922).

Influence of light on the multiplication of yeast. A. W. Rennhard. *Compt. rend. soc. biol.* 89, 1080-2 (1923).

Destruction of yeast by ultraviolet rays. H. Luers and H. Christoph. *Centr. Bakt. Parasitenk., Abt. II*, 59, 8-13 (1923).

Action of ultraviolet rays on alcoholic fermentation and on yeast. Romolo and Remo de Fazi. *Atti Congr. naz. chim. ind. (Milan)* 1924, 449-50 (1924); *Chem. Abstr.* 19, 1470 (1925).

Effect of Roentgen rays upon yeast cells. P. Wels and M. Osann. *Pfluger's Arch. ges. Physiol.* 207, 156-64 (1925).

The primary effect of radium rays on living material. G. A. Nadson. Biochem. Z. 155, 381-6 (1925).

Effect of drugs and radiation upon yeast. I. Basis for the Arndt Schulze law. H. Zeller. Biochem. Z. 171, 45-75 (1926).

Photochemical experiments on respiration. O. Warburg. Naturwissenschaften 14, 1181 (1926).

Sexual anomalies caused by x-rays in the yeast Nadsonia fulvescens. G. A. Nadson and G. S. Philippov. Compt. rend. soc. biol. 95, 433-4 (1926).

Effect of drugs and rays on yeast. III. Effect of Roentgen rays. H. Zeller. Strahlentherapie 23, 336-53 (1926).

Effect of various drugs and of radiation on yeast. II. Demonstration of the influence of Roentgen rays on various substances by means of yeast. H. Zeller. Biochem. Z. 172, 105-25 (1926).

Photopharmacology. V. Influence of sun's rays on growth of yeast in sodium benzoate. D. I. Macht. Proc. Soc. Exptl. Biol. Med. 23, 638-39 (1926).

Photopharmacology. VI. Influence of sun's rays on growth of yeast in some fluorescent solutions. D. I. Macht. Proc. Soc. Exptl. Biol. Med. 23, 639-41 (1926).

The effect of ultraviolet radiation upon yeast culture media. J. W. Woodrow, A. C. Bailey and E. I. Fulmer. Plant Physiol. 2, 171-5 (1927).

The action of irradiated substances. O. Ried. Wien. klin. Wochschr. 42, 1105-7 (1929).

The influence of monochromatic light on the action of Saccharomyces cerevisiae in the presence of glucose. G. Guerrini. Boll. soc. ital. biol. sper. 5, 635-6 (1930).

The action of monochromatic light. G. Guerrini. Boll. soc. ital. biol. sper. 5, 1098-1100 (1930).

The difference in biological action of various radiations on yeast. A. Lacassagne. Compt. rend. 190, 524-6 (1930).

Effect of radiant energy on growth and sporulation in Colletotrichum phomoides. A. H. Hutchinson and M. R. Ashton. Can. J. Res. 3, 187-99 (1930).

Physiological and chemical experiments with ultraviolet rays through glass and also a method of evaluation. H. Valentin. Pharm. Ztg. 75, 982-4, 995-8, 1005-8 (1930).

The effect of ultraviolet radiation on sucrase. II. The role of tryptophan and yeast gums. G. Gorbach and K. Lerch. Biochem. Z. 235, 259-66 (1931).

Effect of monochromatic light on the fermentation products of yeasts. R. Murakami. J. Agr. Chem. Soc. Japan. 8, 1237-47 (1932).

The post-inactivation of irradiated sucrase solutions and the influence of tryptophan and yeast gums. G. Gorbach and D. Kimovec. Monatsh. 61, 39-46 (1932).

The action of certain radiations of varying wave lengths on the development of Saccharomyces ellipsoideus. G. G. Palmieri and G. Giordano. Boll. soc. ital. biol. sper. 7, 1318-21 (1932).

Ultraviolet irradiation stimulates yeast activity. W. L. Owen. Food Industries 5, 252-4 (1933).

The effect of ultraviolet rays upon the fermentation efficiency of yeast in the alcoholic fermentation of molasses. W. L. Owen and R. L. Mobley. Zentr. Bakt. Parasitenk., Abt. II, 88, 273-86 (1933).

The effect of monochromatic light on the fermentation products of yeasts. R. Murakami. Bull. Utsunomiya Agr. Coll. No. 3, 29-45 (44-5 in English) (1933).

Resistance of individual microorganism and particularly of yeast to ultraviolet radiations. J. Beauverie. Compt. rend. 198, 2017-9 (1934)

The effect of x-rays on yeast fermentation. V. Gronchi. Strahlentherapie 51, 319-38 (1934).

The combined action of monochromatic light and of photodynamic substances on the fermentative power of Saccharomyces cerevisiae. G. Guerrini. Boll. soc. ital. biol. sper. 9, 816-20 (1934).

The effect of ultraviolet light on the fermenting power of yeasts. F. W. Tanner and J. R. Byerley. Arch. Mikrobiol. 5, 449-57 (1934).

The physicochemical basis of biological radiations. O. Rahn. Cold Spring Harbor Symposia 2, 226-40 (1934).

Causes of the resistance to ultraviolet light of individual cells of the same species of microorganism. J. Beauverie. Compt. rend. 199, 881-3 (1934).

Studies in ultraviolet and respiratory phenomena. III. The influence of various regions of the spectrum on the anaerobic fermentation of yeast. E. S. Reynolds and F. L. Wynd. Ann. Mo. Bot. Garden 22, 853-60 (1935).

The formation of new strains of Zygosaccharomyces mandshuricus Saito under the influence of radon. J. M. Olenov. Zentr. Bakt. Parasitenk., Abt. II, 92, 163-79 (1935).

The activity of irradiated yeast and its change in activity during storage. N. P. Sveshnikova. Trans. Dynamics development, Moscow, 9, 311-18 (in English 318)(1935).

The influence of ultraviolet rays from a quartz lamp upon the yeast cell and the enzymes in the cell. K. Abramov. Zprávy Ústavu Kvasného Průmyslu Brně 1, 173 (1935-36); Chem. Abstr. 33, 6887 (1939).

Influence of monochromatic light on the action of the fat-splitting enzyme in yeast. R. Murakami. J. Agr. Chem. Soc. Japan 12, 709-13 (1936).

Increase in production of ethyl alcohol by yeast treated with ultraviolet energy. T. D. Beckwith and S. E. Donovick. Proc. Soc. Exptl. Biol. Med. 35, 36-8 (1936).

The effects of monochromatic light on the action of yeast protease. R. Murakami. J. Agr. Chem. Soc. Japan 12, 151-71 (1936).

Effects of monochromatic light on yeast amylase. I. R. Murakami. J. Agr. Chem. Soc. Japan 12, 175-9 (1936).

The effects of monochromatic light on oxidation and reduction by yeast. R. Murakami. J. Agr. Chem. Soc. Japan 12, 172-4 (1936).

Permanence of generation of yeast in its dependence on action of rays. L. Teindl-Czech. Protoplasma 27, 313-40 (1937).

The stimulation of yeast respirations by radiations I. J. C. Fardon, M. J. Carroll and Sister M. V. Ruddy. Stud. Inst. Divi. Thomae 1, 17-34 (1937).

Thermochemical and photochemical phenomena on the death of cells. I. Heat produced on the death and injury to yeast. W. W. Lepeschkin. Protoplasma 27, 351-66 (1937).

The growth response of yeast exposed to monochromatic ultraviolet radiation. A. Hollander and B. M. Duggar. J. Bact. 33, 16 (1937).

Influence of monochromatic light on action of yeast catalase. I. R. Murakami. J. Agr. Chem. Soc. Japan 13, 429-34, 435-8 (1937).

Intercellular wound hormones from ultraviolet injured cells. J. R. Loofbourow, Sister C. M. Dwyer and Sister M. N. Morgan. Stud. Inst. Divi. Thomae 2, 137-53 (1938).

The effect of ultraviolet rays on yeast. R. A. Branopol'skaya. Khlebopakarnaya Prom. 1939, No. 4-5, 27-30; Chem. Abstr. 36, 2286, (1942).

Physiological changes produced in yeast by ultraviolet light. T. F. Anderson and B. M. Duggar. Science (n.s.) 90, 358 (1939).

Production of intercellular hormones. J. R. Loofbourow and Sister C. M. Dwyer. Nature 143, 725-6 (1939).

The protective action of calcium salts against the effect of ultraviolet rays on yeast. T. M. Kondrat'ova. Mikrobiologiya 8, 899-903 (904 in English)(1939).

Alteration of the toxicity resistance of yeast cells by rays of the solar spectrum. W. W. Lepeschkin. Protoplasma 34, 353-61 (1940).

The effect of ultraviolet light on living yeast cells. J. N. Davidson. Biochem. J. 34, 1537-9 (1940).

Optically active chemical produced by yeast aids synthesis of l-ephedrine. J. Kamlet. Drug Trade News 16, No. 16, 27 (1941); Wallerstein Labs. Commun. 4, 213 (1941).

The effects of heat and ultraviolet light on certain physiological properties of yeast. T. F. Anderson and B. M. Duggar. Proc. Am. Phil. Soc. 84, 661-8 (1941).

Proliferation-promoting activities of extracts from ultraviolet injured yeast cells and of bios components. E. S. Cook and Sister A. G. Cronin. Nature 150, 93-4 (1942).

Influence of Roentgen rays on yeast cells. H. v. Euler. Svenska Bryggarefören. Månadsbl. 57, 141-6 (1942); Chem. Abstr. 37, 5107 (1943).

Changes produced in yeast cells by Roentgen rays and chemical substances. I and II. H. v. Euler, L. Ahlström and B. Högberg. Z. physiol. Chem. 277, 1-17, 18-25 (1942).

Effect of aeration in growing

Influence of air on the stability of yeast. F. Hayduck, J. Dehnicke and H. Wustenfeld. Wochschr. Brau. 27, 81-5, 93-5 (1910).

The formation of volatil acids by yeasts after fermentation with access of air. A. Osterwalder. Centr. Bakt. Parasitenk., Abt. II, 32, 481-98 (1912).

A new method for increasing the production of yeast. M. Delbrück and H. Claassen. Z. Ver. deut. Ing. 59, 844 (1915).

Experiments on replacement of malt germ by ammonium compounds in the air process of yeast growing. A. Wohl and S. Scherdel. Z. angew. Chem. 34, 41-5 (1921).

Metabolic phenomena and products balance in the fermentation of molasses by the aeration process. H. Claassen. Z. Ver. deut. Zuckerind. 77, Tech. Tl., 607-22 (1927).

Conditions for the aeration of fermenting vats in the yeast industry or for the aeration of liquids in general. E. G. Stich. Chem. Ztg. 52, 865-6 (1928).

The biology of yeasts in aerated culture media. F. Weleminsky and E. Butschowitz. Zentr. Bakt. Parasitenk., Abt. II, 78, 178-91 (1929).

Alcohol losses in yeast manufacturing. F. Wagner. Brennerei Ztg. 47, 162-3 (1930); Chem. Abstr. 25, 1629 (1931).

Observations on Stich's method of aeration. P. Lindner. Chem. Ztg. 54, 238-40 (1930).

Influence of aeration during fermentation on yeast condition and beer quality. F. Windisch. Wochschr. Brau 47, 33-9, 45-51 (1930).

Losses of alcohol in manufacturing yeast (by aeration). F. Wagner. Brennerei Ztg. 49, 126 (1932); Chem. Abstr. 27, 2756 (1933).

Growth of yeast on oxygen deficiency. R. Koch. Wochschr. Brau. 50, 169-72 (1933).

The chemical reactions in the production of yeast by the aeration process. H. Claassen. Chem. Ztg. 58, 901-2. (1934).

Exchange of matter, respiration and gas exchange of yeast cells in experiments with aeration and continuous feeding. H. Claassen. Biochem. Z. 275, 350-60 (1935).

Some factors affecting yeast propagation. W. H. Stark, P. Kolachov and H. F. Willkie. Am. Soc. Brewing Chemists Proc. 4, 49-56 (1941).

Continuous aerobic process for distillers' yeast-engineering and design factors. E. D. Unger, W. H. Stark, R. E. Sealf and P. J. Kalachov. Ind. Eng. Chem. 34, 1402-5 (1942).

Aeration in the production of compressed yeast. G. de Beeze and A. J. Liebmann. Ind. Eng. Chem. 36, 882-90 (1944).

Synthesis of amino acids and other nitrogenous compounds

Synthesis of protein in yeast. W. Zaleski and W. Israelsky. Ber. deut. bot. Ges. 32, 472-9 (1914).

The formation of yeast protein from inorganic nitrogen compounds. E. Donath. Oesterr. Chem. Ztg. (n.s.) 18, 74 (1915)

Synthesis of nitrogen compounds by autolysis of yeast. II. S. Kostychev and V. Brilliant. Bull. acad. sci. Petrograd, (6) 10, 953-70 (1916).

The fixation of atmospheric nitrogen by yeast as a function of the hydrogen-ion concentration. E. I. Fulmer and L. M. Christensen. J. Phys. Chem. 29, 1415-8 (1925).

Synthesis of proteins by Saccharomyces. J. Effront. Compt. rend. 184, 1302-4 (1927).

Synthesis of optically active compounds by means of yeast. I. Synthesis of l-aspartic acid from fumaric acid. Y. Suniki. Chem. Abstr. 23, 2531 (1929).

The effect of age on the nitrogen content of yeast. N. Nielsen. Compt. rend. trav. lab. Carlsberg 19, No. 16, 11 pp. (1933).

The nitrogenous metabolism of yeast. II. General considerations relating to yeast growth and fermentation in synthetic media. III. The ability of certain pure chemical compounds to function as nitrogen sources for yeast. R. S. W. Thorne. J. Inst. Brewing 39, 597-621 (1933).

Influence of the source of nitrogen of the culture medium on the synthesis of proteins by yeast. H. Luers and M. Vaidya. Congr. chim. ind. commun. 14, tome 2, 6 pp. (1934).

Acid formation in yeast autolysis. H. Haehn and H. Leopold. Z. Untersuch. Lebensm. 67, 50-8 (1934).

Synthesis of amino acids by yeast. II. Isolation of alanine. C. Fromageot and P. Desnuelle. Biochem. Z. 273, 24-30 (1934).

Processes in the synthesis of yeast substance and the possible yields in yeast cultivation. R. Lechner. Z. Spiritusind. 59, 391-2, 399-400 (1936).

Role of ~~the~~ keto acids other than pyruvic in the synthesis of amino acids by yeast. C. Fromageot and G. Minard. Bull. soc. chim. biol. 18, 1454-66 (1936).

Possible roles of pyruvic acid oxime and acrylic acid in the synthesis of alanine by yeast during alcoholic fermentation. C. Fromageot and P. Desnuelle. Bull. soc. chim. biol. 18, 820-4 (1936).

Biological albumin synthesis by yeast. H. Fink. Svensk. Kem. Tid. 50, 177-85, 194-213 (1938).

Biological protein synthesis by yeast. H. Fink. Z. Spiritusind 61, 381-2, 389-90, 392, 398, 400 (1938):

The biological cell-substance synthesis of yeast. III. Yeast culture in simple carbon compounds. H. Fink and J. Krebs. Biochem. Z. 300, 59-77 (1938).

The biological synthesis of cell substance by yeast. I. H. Fink and J. Krebs. Biochem. Z. 299, 1-27 (1938).

Tyrosine from yeast. K. Myrback. Svensk Kem. Tid. 50, 129-30 (1938).

Amino acids as growth promoters

Amino acids and microorganisms. A. W. Dox. Proc. Iowa Acad. Sci. 24, 539-45 (1917).

Utilization of amides by yeast. P. Thomas. Ann. inst. Pasteur 33, 777-806 (1919).

Behavior of some amino acids towards oxygenated yeast. F. Lieben. Biochem. Z. 132, 180-7 (1922).

The intermediary metabolism of tryptophan. XV. The influence of tryptophan and its physiological metabolic products on the development of yeast. J. Saito. Z. physiol. Chem. 214, 17-21 (1933).

The role of asparagine and glutamine in higher plants. G. Schwab. Planta 24, 160-2 (1935).

Ammonium salts and amino acids as sources of nitrogen in the production of pressed yeast. F. Wagner. Ann. zymol. (2) 3, 176-94 (1936).

The amino acids as growth factors of yeast. R. Sterckx. Chem. Abstr. 37, 4758 (1943).

Ammonia and amino acids as sources of nitrogen for the production of compressed yeast. F. Wagner. Zentr. Bakt. Parasitenk., Abt. II, 93, 359-71 (1936).

The work of F. Wagner on the ammonium salts and amino acids as sources of nitrogen in the production of compressed yeast. H. Claassen. Zentr. Bakt. Parasitenk., Abt. II, 95, 167 (1936).

Assimilation of alcohol and of amino acids by yeast in the aeration yeast process. H. Claassen. Z. Spiritusind. 59, 440 (1936).

Effect of certain compounds containing the sulfhydryl group (cysteine, cystine and glutathione) on the cellular multiplication of *Saccharomyces cerevisiae*. G. Mezzadrolì and V. Vicentini. Bull. assoc. chim. 54, 929-35 (1937).

Assimilation of nitrogen from amino acids by yeast. R. S. W. Thorne. J. Inst. Brewing 43, 288-93 (1937).

Growth effect of amino acids III. Growth effect of β alanine, β alanyl glycine, aspartic acid, glycylaspartic acid and similar substances on yeast. N. Nielsen and V. Hartelius. Compt. rend. trav. lab. Carlsberg, physiol., 22, 271-80 (1938).

The growth effect in yeast of β alanine, β alanyl glycine, aspartic acid, glycylaspartic acid and related substances. N. Nielsen and V. Hartelius. Biochem. Z. 296, 359-66 (1938).

The influence of amino acid degradation products and some related substances upon yeast growth and fermentation. R. S. W. Thorne. J. Inst. Brewing 45, 13-31 (1939).

The action of amino acids as growth substances with respect to yeast. N. Nielsen. Biochem. Z. 307, 187-93 (1941).

Amylases

Action of ultraviolet rays on amylase, invertin and a mixture of these two enzymes. A. Chauchard and B. Mazoué. Compt. rend. 152, 1709-11 (1911).

Regarding the activation of the amylolytic enzymes by substances produced by fermentative organisms. H. Fringsheim. Z. angew. Chem. 39, 1454-7 (1926).

Yeast amylase and the fermentation of polysaccharides. A contribution to the subject of autolysis. A. Gottschalk. Z. physiol. Chem. 153, 215-24 (1926).

Further studies on yeast amylase. A. Gottschalk. Z. physiol. Chem. 178, 139-47 (1928).

Amylosynthase. S. Nishimura. J. Agr. Chem. Soc. Japan 6, 160-7, 485-6, 987-90 (1930); 7, 29-35 (1931).

Amylosynthase. S. Nishimura and T. Minagawa. Proc. Imp. Acad., Tokyo, 7, 258-60 (1931).

Amylase protecting substances. IV. Protective action of infusions of yeast, malt and barley. H. Nakamura. J. Soc. Chem. Ind. Japan 34, Suppl. binding, 16-17 (1931). Amylase protecting substances. V. Isolation of the protective substances from proteases. Ibid. 18-19. Amylase protecting substances. VI. Isolation of the protective substances from peptones and malt and yeast infusions. Ibid. 19-20. Amylase protecting substances. VII. The identification of the chemically pure protective substances. Ibid. 21-22.

Amylosynthase. T. Minagawa. Proc. Imp. Acad., Tokyo 8, 244-6 (1932).

Amylosynthase. I. T. Minagawa. J. Agr. Chem. Soc. Japan 8, 176-83 (1932). Amylosynthase. II. Ibid. 508-10. Amylosynthase IV. Ibid. 811-14. Amylosynthase. XXIV. The reaction velocity. 3. Ibid. 10, 550-3 (1934). Amylosynthase. XXV. Zymogen of yeast amylosynthase. Ibid. 11, 370-3 (1935).

Yeast amylase. I. Preparation of amylase solution from pressed yeast. K. Ono. J. Agr. Chem. Soc. Japan 11, 60-7 (1935). Yeast amylase. II, III. Preparation of amylase solution from dry yeast. Ibid. 791-5. Yeast amylase. IV. Ibid. 11, 796-802. Yeast amylase. IV. Enzyme-chemical properties. Optimum pH and temperature. Ibid. 803-7. Yeast amylase. V. Enzyme-chemical. 2. The change of starch-saccharifying action of yeast amylase with the lapse of time and the correlation between the amount of enzyme and starch used and that of starch saccharified. Ibid. 12, 139-44 (1936). Yeast amylase. VI. Thermostability of yeast amylase. Ibid. 191-5. Yeast amylase. VII. Effects of pH on the durability of yeast amylase during its storage and the stability of yeast amylase. Ibid. 320-7. Yeast amylase. VIII. Effects of some inorganic and organic substances on the amylolytic power of yeast amylase. Ibid. 378-85. Yeast amylase. IX. Behaviors of yeast amylase on glycogen. Ibid. 467-74. Yeast amylase. X. Effects of mercuric chloride, sodium fluoride and boiled yeast juice on the action of yeast amylase. Ibid. 560-8. Yeast amylase. XI. Purification of yeast amylase and its properties. Ibid. 569-75. Yeast amylase. XII. The action of amylase prepared by maceration and other methods. Ibid. 650-60.

Purification of koji amylase by precipitation method. N. Taketomi and S. Takeda. Waseda Appl. Chem. Soc. Bull. 25, 11-15 (1935)(Abstr. in English 2-34); Chem. Abstr. 29, 7352 (1935).

Fluctuation of amylase during the cultivation of yeast mash. Y. Tokuoka. J. Agr. Chem. Soc. Japan 13, 313-17 (1937).

Amylases of yeast and conversion of glucose -1- phosphoric acid by yeast extracts. A. Schaffner and H. Specht. Naturwissenschaften. 26, 494-5 (1938).

Starch. XXI. Amylolytic enzymes of yeast. K. H. Meyer and P. Bernfeld. Helv. Chim. Acta. 25, 399-403 (1942).

Analytical, General

The fermentative power of pure yeasts and some associated fungi. W. B. Alwood. U. S. Dept. of Agr. Bur. Chem. Bull. 111, 28 pp. (1908).

A comparative study concerning yeast control in the distillery. T. Chrzascz. Z. Spiritusind. 32, 215-7, 225-7 (1909). Ibid. 302.

A comparative study concerning yeast control in the distillery. A. Wenck and W. Arndt. Z. Spiritusind 32, 283 (1909).

Differentiation of varieties of yeast by the complement-fixation reaction. A. Schutze. Z. Immunitätsforsch. 8, 611-5 (1911).

Microchemical detection of potassium in yeast and other cells. The importance of potassium. Th. Bokorny. Allg. Brauer-Hopfen-Ztg. 52, 709-10 (1912).

The selection of yeast for biochemical processes in the detection of sugars and glucosides. Reply to L. Rosenthaler. E. Bourquelot and H. Herissey. J. pharm. chim. (7) 6, 246-53 (1912).

Method of distinguishing by appearance, mycoderma and related fungus in the distillery and yeast manufacture. J. C. Holm. Bull. assoc. chim. suc. dist. 28, 1040-3 (1911).

Photomicrography applied to biometry with special reference to differentiation between yeasts employed in practice. P. Lindner. Wochschr. Brau. 31, 469-71 (1914).

Determination of mineral constituents in barley, malt, wort, beer and yeast. F. Schonfeld and S. Sokolowski. Wochschr. Brau. 31, 493-5 (1914).

Measurement of yeast fermentation by means of the liquid interferometer. O. Wolff. Chem. Ztg. 39, 197-8 (1915).

New yeast preparation for use in the estimation of crystallizable sugar by inversion. H. Pellet. Bull. assoc. chim. sucr. dist. 33, 30-3 (1915); Mo. Bull. Agr. Intell. 7, 592-3 (1916).

Saccharimeters for brewers. L. Pierre. Brasserie et malterie 7, 148-50 (1917); Chem. Abstr. 11, 3374 (1917).

A delicate method of determining invert activity. C. K. Watanabe and V. C. Myers. Proc. Soc. Exptl. Biol. Med. 15, 142-3 (1918).

Quantitative estimations of the enzymic activity of living cells. I. H. v. Euler, O. Svanberg and S. Heintze. Fermentforsch. 2, 194-9 (1918).

Remarks on some methods for the analysis of yeasts. E. Vautier. Mitt. Lebensm. Hyg. 10, 98-101 (1918).

A study of the factors which interfere with the use of yeast as a test substance for the antineuritic substance. G. de P. Souza and E. V. McCollum. J. Biol. Chem. 44, 113-29 (1920).

Physiological chemical studies of the yeast cell. II. Application of the typical vitamin reactions upon the yeast cell. K. Schweizer. Mitt. Lebensm. Hyg. 11, 200-15 (1920).

Physiological chemical studies of the yeast cell. I. Use of the precipitometer and of the catalase apparatus to determine the course of fermentation. K. Schweizer. Mitt. Lebensm. Hyg. 11, 193-200 (1920).

A test for anti-beriberi vitamin and its practical application. C. Funk and H. E. Dubin. J. Biol. Chem. 44, 487-98 (1920).

Studies in the vitamin content. W. H. Eddy and H. C. Stevenson. J. Biol. Chem. 43, 295-309 (1920).

Vitamins and yeast growth. R. J. Williams. J. Biol. Chem. 46, 113-8 (1921).

The chemical investigation of cereals, barley, malt, legumes, flour, baby foods, starch, prepared starch, egg powder, bread, baked goods, alimentary pastes, yeast and baking powder. E. Spaeth. Handb. biochem. Arbeitsmethoden, Abt. 4, Tl. 8, Erste Hälfte, 65-312 (1923).

Detection of brewers' yeast in pressed yeast. C. Schweizer. Bull. assoc. chim. suc. dist. 42, 242-7 (1925).

Gravimetric estimation of bacteria and yeast. H. I. Coombs and M. Stevenson. Biochem. J. 20, 998-1002 (1926).

Estimation of vitamin B. Y. Kinugasa and Y. Hattori. J. Pharm. Soc. Japan No. 536, 852-66 (1926).

The use of ultraviolet light in the examination of foods. G. Popp. Z. Untersuch. Lebensm. 52, 165-71 (1926).

Fermentation test for Faex medicinalis, and other specifications of the German Pharmacopeia. Th. Sabalitschka. Pharm. Ztg. 71, 1606-7 (1926).

The growth of yeast. IV. A nephelometric method of counting yeast suspensions. G. L. Peskett. Biochem. J. 21, 460-6 (1927).

Human milk studies. I. Technic employed in vitamin studies. I. G. Macie, J. Outhouse, M. L. Long and A. Graham. J. Biol. Chem. 73, 153-74 (1927).

The application of the U.S.P. X yeast fermentation test to colloidal silver compounds. H. M. Taylor. J. Am. Pharm. Assoc. 16, 820-4 (1927).

Note on the preparation of yeast juice by Buchner's method. A. Harden and F. R. Henley. Biochem. J. 21, 196-7 (1927).

Gold and platinum electrodes and the acid error in the determination of pH of yeast and blood. L. P. Rosanov. Zhur. exptl. Biol. Med. 10, 141-6 (1928).

A modification of the phenolized gelatin technic for the mounting of microscopic preparations of yeasts and algae. H. Kaufferath. Rev. hyg. m d. pr v. 50, 638-40 (1928).

A rapid and accurate method for determining the quantity of yeast or other microorganisms in a suspension. R. J. Williams, E. D. McAlister and R. R. Roehm. J. Biol. Chem. 83, 315-20 (1929).

The effects of certain chemical compounds upon the course of gas production by baker's yeast. S. E. Br nham. J. Bact. 18, 247-64 (1929).

Heme and tissue iron. M. L. Anson and A. E. Mirsky. J. Gen. Physiol. 12, 401-5 (1929).

Determination of the fermenting power of yeasts and its importance in bread making. E. Elion and L. Elion. Bull. soc. chim. biol. 11, 724-30 (1929).

The role of polysaccharides of yeasts in the serological differentiation of yeasts. T. Tomcsik. Z. Immunit tsforsch. 66, 8-16 (1930).

Yeast testing. W. H. Cook and J. G. Malloch. Cereal Chem. 7, 133-42 (1930).

Faex medicinalis. E. Richter. Apoth. Ztg. 45, 1447 (1930).

Modification of the sodium nitroprusside reaction for hydrosulfide derivatives in low concentration. R. Fleming. Compt. rend. soc. biol. 104, 831-2 (1930).

Crude fat determination in yeast. G. Staiger. Brenneri Ztg. 47, 44 (1930); Chem. Abstr. 24, 2542 (1930).

Involution of cultures of yeast 1. L. T. Henley. J. Inst. Brewing 36, 304-7 (1930).

Determination of dry matter (or moisture) in pressed yeast. L. Fletcher. J. Inst. Brewing 37, 506-8 (1931).

Studies on a method for determining the oxygen consumption, the respiratory quotient and reduction of methylene blue by tissues and yeast. P. Ambrus, T. Banga and A. Szent-Gyorgyi. Biochem. Z. 240, 473-7 (1931).

Standardization of media in the acid ranges with special reference to the use of citric acid and buffer mixtures for yeast and mold media. J. G. Davis. J. Dairy Res. 3, 133-41 (1931).

Development of photochemical methods for the study of the oxygen-transferring enzyme. (Application of acetic acid bacteria and yeast cells.) F. Kubowitz and E. Haas. Biochem. Z. 255, 247-77 (1932).

New microextraction apparatus. G. Gorbach. Mikrochemie 12, 161-8 (1932).

Determination of hydrogen-ion concentration in living yeast and bacterial cells. M. Gutstein. Protoplasma 17, 454-70 (1932).

Feulgen's reaction and some of its applications for botanical material. L. A. Margolena. Stain Tech. 7, 9-16 (1932).

The arsenic content of hops as a measure for the arsenic content of brewery yeast. M. Lindemann. Wochschr. Brau. 49, 257-9 (1932).

Relation between the arsenic contents of yeast and hops. M. Lindemann. Wochschr. Brau. 49, 257-9 (1932).

The diastase value of yeasts according to Pollak. G. Issoglio. Industria chimica 8, 702-3 (1933).

Studies and methods of selection of strains of Greek yeasts from Cyprus and Santorin by treatment with tartaric acid in presence of alcohol and magnesium sulfate. G. K. Kelaiditos. Praktika Akad. Athenon 8, 385-9 (1933).

An isothermal calorimeter for slow reactions. F. D. Coon and F. Daniels. J. Phys. Chem. 37, 1-12 (1933).

Glyoxalase. I. The applicability of the manometric method to the study of glyoxalase. M. E. Platt and E. F. Schroeder. J. Biol. Chem. 104, 281-97 (1933).

Biological purity of pitching yeast. T. Janensch. Wochschr. Brau. 50, 237-9 (1933).

Rapid method of determining ash of dry and wet yeasts, malt and molasses. L. Lens. Brodilnaya Prom. 10, No. 4, 23-5 (1933); Chem. Abstr. 28, 7418, (1934).

Sarcina proved worst enemy among microorganisms (in brewing). (Detection of sarcina in pitching yeast.) S. Laufer and S. Siegel. Am. Brewer 67, No. 11, 22-3 (1934).

Yeast as indicator of growth substance. E. Almoschlechner. Planta 22, 515-42 (1934).

Death of yeast culture, as registered by the electric resistance. B. J. Luyet. Proc. Soc. Exptl. Biol. Med. 31, 800-1 (1934).

Surface electric moments in a liquid. N. Choucroun. Compt. rend. 199, 36-8 (1934).

Aerometric determination of the yeast content of wort and its application in the separation of yeast in yeast factories. W. Heller. Przemysl Chem. 19, 3-9 (1935); Chem. Abstr. 30, 1175 (1936).

Methods for detecting the lipolytic effect of microorganisms. L. M. Horovitz-Vlasova and M. T. Livshitz. Proc. Inst. Sci. Res. Food Ind., Lonigrad, 3, No. 3, 22-32 (33 in English) (1935).

Determination of the biological value of medicinal yeasts. A. J. J. Van de Velde. J. pharm. Belg. 17, 1-6, 21-4 (1935).

The determination of glutathione in beer. G. Weller. Ann. ferment. 1, 108-14 (1935).

Colorimetric (nephelometric) methods for measuring the growth of yeast. V. Sarafanov. Arkh. Biol. Nauk 35 B, No. 1, 309-15 (315-16 in English) (1934).

Yeast variability as measured by the fermentograph. C. Near and B. Sullivan. Cereal Chem. 12, 506-11 (1935).

Distinguishing between top and bottom fermentation yeasts with the aid of blood-serum agglutinin. R. Laneau. Bull. assoc. étud. école sup. brasserie univ. Louvain 35, 111 (1935); Chem. Abstr. 30, 4618, (1936).

The technic of gastric-acidity estimations. I. Standardized yeast extract as acid stimulant. F. Leifer. Med. Klin. 31, 1428-30 (1935).

Quantitative studies on yeast suspensions by turbido-metric and other methods. R. L. W. Thorne and L. R. Bishop. J. Inst. Brewing 42, 15-26 (1936).

Apparatus for measuring the gaseous exchange of yeasts. J. Giaja. Ann. Ferment. 2, 1-5 (1936).

Test tube method to differentiate ale and lager yeasts. S. S. Epstein. Am. Brewer 69, No. 11, 30-1 (1936).

Estimation of the specific gravity and the volume of yeast cells. K. Silbereisen. Wochschr. Brau. 53, 340-3 (1936).

Application of the nephelometer to the study of yeast. G. Medvedev and A. Shelaumova. Biochem. Z. 289, 52-4 (1936).

Estimation of yeast crop with high and low attenuating bottom-fermenting beer yeasts. F. Stockhausen and R. Koch. Wochschr. Brau. 53, 325-30 (1936).

Measurement of yeast concentration with the Lange colorimeter. C. Enders and K. Karnbach. Wochschr. Brau. 54, 185-6 (1937).

An open-system respirometer for study of the gaseous metabolism of microorganisms. S. E. Donovan and T. D. Beckwith. J. Bact. 33, 291-306 (1937).

A study of the growth of yeast by measuring the change in the pH of the nutrient solution. V. Hartelius. Planta 27, 287-94 (1937).

An apparatus for standardized yeast culture according to the aeration procedure. H. Fink and R. Lechner and J. Krebs. Biochem. Z. 299, 28-31 (1938).

The use of dry yeast in distillery. S. Bocharov. Spirto-Vodochnaya Prom. 15, No. 5, 19-20 (1938); Chem. Abstr. 33, 5986 (1939).

Sampling methods for brewery biological process control. I. Janensch. Wochschr. Brau. 55, 54-5, 59-62 (1938).

Determination of tryptophan and tyrosine in yeast with the Pulfrich photometer. H. Kraut. Biochem. Z. 297, 297-303 (1938).

The electrical conductivity of suspensions of fresh and of treated yeasts. K. Sandera. Chem. Obzor 14, 111-15 (with English résumé) (1939); Chem. Abstr. 33, 7326 (1939).

A rapid method for determining the moisture content of bread, yeast and other food products. M. N. Tul'chinskiĭ and A. M. Isaikin. Voprosy Pitaniya 8, No. 1, 61-7 (67 in English)(1939); Chem. Abstr. 33, 5922 (1939).

Estimation of foreign organisms in yeast. K. E. Jensen. J. Inst. Brewing 45, 500 (1939); Analyst 65, 62 (1940).

Analytical evaluation of beechwood sulfite [pulp] liquor for yeast cultivation. R. Lechner. Z. Spiritusind. 63, 155-7 (1940).

Riboflavin content of yeasts determined photometrically and biologically. A. E. Schumacher and G. F. Heuser. Ind. Eng. Chem, Anal. Ed., 12, 203-4 (1940).

The determination of the electrical conductivity of yeast from the viewpoint of the manufacturer. V. Jonáš, R. Briess and M. Kmánek. Chem. Obzor 14, 169-77 (English Summary)(1939); Chem. Abstr. 34, 1125 (1940).

Determination of aneurin and aneurinphosphates in yeast. H. G. K. Westenbrink, D. A. van Dorp and M. Gruber. Rec. trav. chim. Pays-Bas 60, 185-98 (1941)(in English).

A biological test for the examination of brewery yeast. J. A. Burns. J. Inst. Brewing 47, 10-14 (1941).

Growth-depressant substance from yeast. E. S. Cook, C. W. Kreke, Sister M. C. Giersch and Sister M. P. Schroeder. Science (n.s.) 93, 616-17 (1941).

Experimental mutation-selection of yeast by means of chemical substances. R. Bauch. Wochschr. Brau. 59, 1-7, 9-11 (1941).

The determination of the yeast yield of raw materials for fodder yeast production. H. Fink, R. Lechner, R. Illig, J. Krebs, M. Ross and I. Schlie. Angew. Chem. 54, 281-4 (1941).

Determination of traces of copper in wort, beer and yeast. I. Stone. Ind. Eng. Chem., Anal. Ed., 14, 479-81 (1942).

A method for measurement of yeast growth in bios and vitamin investigations. L. Atkin, L. S. Schultz, and C. W. Frey. Arch. Biochem. 1, 9-16 (1942); Chem. Abstr. 37, 396 (1943).

A constant-pressure respirometer designed for use with medium volumes of yeast suspension. A. Gottschalk and W. A. Rawlinson. Austral. J. Exptl. Biol. Med. Sci. 20, 169-72 (1942).

A fluormetric method for the estimation of riboflavin in foodstuffs. M. Swaminathan. Indian J. Med. Res. 30, 23-35 (1942).

Biological methods for yeast examination. C. A. Dayharsh, H. L. Chere, M. Goll, I. J. Olshausen, J. B. Rehm, and F. P. Riedel. *Am. Brewer* 76, No. 9, 24-8 (1943).

Analytical methods for yeast examination. R. I. Tenney, F. A. Wilcox, G. S. Bratton, F. O. Rickers, M. H. Zimmerman, C. E. Estes, G. Kirby and M. C. Miller. *Am. Brewer*, 76, No. 10, 21-2, 24 (1943).

Yeast microbiological methods for determination of vitamins. Pantothenic acid.. L. Atkin, W. L. Williams, A. S. Schultz, and C. N. Frey. *Ind. Eng. Chem., Anal. Ed.*, 16, 67-71 (1944).

Electrophoretic analysis of yeast extracts. K. G. Stern. *J. Biol. Chem.* 152, 345-61 (1944).

Effect on Anemias

Bile salt metabolism. III. Gelatin, fish, yeast, cod liver and meat extracts. F. S. Smyth and G. H. Whipple. *J. Biol. Chem.* 59, 647-54 (1924).

Studies on the nutritive value of milk. III. The supplementary value of various constituents of synthetic basal rations. W. E. Krauss. *J. Dairy Sci.* 12, 438-44 (1929).

Nutritive value of milk. I. Production of nutritional anemia in albino rats through exclusive whole milk diets. W. E. Krauss. *J. Dairy Sci.* 12, 74-9 (1929).

Studies on the nutritive value of milk. IV. The supplementary value of yeast in nutritional anemia of albino rats. W. E. Krauss. *J. Dairy Sci.* 13, 246-56 (1930).

The effect of yeast and wheat embryo in anemias. I. Marmite, yestamin and bemax in megalocytic and nutritional hypochromic anemias. C. C. Ungley. *Quart. J. Med. (n.s.)* 2, 381-405 (1933).

Studies in the anemias of infancy and early childhood. I. Introduction. L. G. Parsons. *Arch. Disease Childhood* 8, 85-94 (1933). II. The effect of yeast on nutritional anemia in rats. L. G. Parsons and E. M. Hickmans. *Ibid.* 95-116.

The effect of yeast and wheat embryo in anemias. II. The nature of the hemopoietic factor in yeast effective in pernicious anemia. C. C. Ungley and G. V. James. *Quart. J. Med. (n.s.)* 3, 523-48 (1934).

The reticulocyte response in guinea pigs following the oral administration of certain antianemic substances. I. K. Miller and C. P. Rhoads. *New Engl. J. Med.* 213, 99-101 (1935).

Additional observations on the anemia caused by deaminized casein. A. G. Hogan, R. E. Guerrant and W. S. Ritchie. J. Biol. Chem. 115, 659-72 (1936).

The effect of brewers' yeast on blood production. I. L. Manville and J. W. Grondahl. Am. J. Physiol. 116, 626-34 (1936).

The relationship of the gastrointestinal tract to anemia. W. B. Castle. Cold Spring Harbor Symposia 5, 414-18 (1937).

A new factor in the production and cure of certain macrocytic anemias. L. Wills, P. W. Clutterbuck and B. D. F. Evans. Lancet 232, I, 311-14 (1937).

Influence of yeast-containing diets on the total fatty acids and cholesterol content of the livers of intact and partially nephrectomized rats. J. C. Hortonstine, A. Chanutin and S. Ludewig. J. Biol. Chem. 125, 455-9 (1938).

Experimental hyperchromic macrocytic anemia and the antianemic principle. A. Rossi and R. Conte-Marotta. Rend. accad. Italia, fis. mat. nat., (7) 1, 295-8 (1939).

Yeast as an extrinsic factor in relation to pernicious anemia. R. W. Heinle and F. R. Miller. J. Clin. Invest. 18, 257-9 (1939).

The antianemic effect of yeast in pernicious anemia. M. M. Wintrobe. Am. J. Med. Sci. 197, 286-310 (1939).

The antianemic and antidermatitic effect of yeast extract and adermine. H. J. Wolf and E. Seidel. Klin. Wochschr. 19, 1106-9 (1940).

New results on yeast factors. H. v. Euler. Svenska Brygarefören. Månadsbl. 56, 133-9 (1941); Chem. Abstr. 38, 1771 (1944).

Autolysis

The influence of alkalies and acids on the autolysis of yeast. E. Navassart. Z. physiol. Chem. 70, 189-97 (1911).

The influence of antiseptics on yeast autolysis. E. Navassart. Z. physiol. Chem. 72, 151-7 (1911).

The volatile bases of yeast autolysis. Nicolaus Ivanov. Biochem. Z. 58, 217-24 (1913).

Synthetic processes in the course of yeast autolysis. N. N. Ivanov. Bull. acad. sci. Petrograd (6) 9, 615-28 (1915).

The autolysis of yeast and the influence of its products of proteolysis on the development of yeast and lactic bacteria. P. Vansteenberghe. Ann. inst. Pasteur 31, 601-30 (1917).

Autolysis of yeast in its dependence on hydrogen and hydroxyl ions. K. G. Dernby. Medd. Vetenskapsakad. Nobelinst. 3, No. 23, 1-26 (1918).

Medium from extract of autolyzed yeast for the culture of B. coli. F. Dienert and A. Guillerd. Compt. rend. 168, 256-7 (1919).

The cellulose of lichens and yeast, hemicellulose and yeast autolysis. E. Salkowski. Z. physiol. Chem. 114, 31-38 (1921).

Changes in the nitrogen-containing substances at the terminal phases of yeast autolysis. N. N. Ivanov. Biochem. Z. 120, 1-24 (1921).

The mechanism of autolysis. I. The effect of iodine on the autolysis of yeast. O. Steppuhn and L. Utkin-Ljuboozoff. Biochem. Z. 140, 17-27 (1923).

Autolysis of yeast in sucrose solutions. D. van Goethem. Bull. asso. élèves inst. ferment. Gand 27, 314-20, 325-46 (1926); Chem. Abstr. 21, 150-1 (1927).

Autolysis of yeast in sucrose solutions. D. van Goethem. Wochschr. Brau. 44, 282 (1927).

Autolysis of bottom beer yeast. W. Windisch, P. Kohlbach and E. Fr. Rothenbach. Wochschr. Brau. 45, 251-6, 261-5, 281-5, 298-302 (1928).

Autolyzed yeast. H. Matsuoka. Trans. Tottori Soc. Agr. Sci. 3, 32-6 (1931); Chem. Abstr. 26, 1645 (1932).

Rapid autolysis of yeast as a means of determining its keeping qualities. A. M. Malkow. Broditi'naya Prom. 10, 33-7 (1933); Chem. Abstr. 29, 4893-4 (1935).

Autolysis of yeast. H. Haehn and H. Leopold. Wochschr. Brau. 51, 97-100 (1934).

The effect of autolysis on yeast cells. W. A. Belitzer. Protoplasma 22, 17-21 (1934).

Release of the zymase system from the yeast cell by autolysis. R. Nilsson and F. Alm. Z. physiol. Chem. 239, 179-87 (1936).

Autolysis of brewers' yeast. J. Jackowska-Szczukowska. Chem. Abstr. 33, 3064 (1939).

Preparation of autolyzates from spent yeast. S. Konovalov. Spirto-Vodochnaya Prom. 15, No. 9, 22-4 (1938); Chem. Abstr. 34, 3012 (1940).

Aneurin and riboflavin in yeast autolysis. A. V. Trufanov and V. A. Kirsanova. Biokhimiya 5, 234-9 (1940).

The autolyzate of brewers' yeast and other yeasts. J. M. Rosell Ion, Madrid, 2, 441-6 (1942); Chem. Zentr. 1942, II, 2614.

Baking

Experiments regarding the regulation of the yeast trade. F. W. Dafert, K. Kornauth and G. Kock. Z. Spiritusind. 31, 573 (1908).

Prohibiting of yeast mixing. A. Kopper. Chem. Ztg. 33, 110 (1909).

Toxicity of flours towards Saccharomyces cerevisiae (top fermentation brewery yeast). J. L. Baker and H. F. E. Hulton. J. Soc. Chem. Ind. 28, 781-4 (1909).

Behavior of wheaten flour towards bakers' and brewers' yeast. J. L. Baker and H. F. E. Hulton. J. Soc. Chem. Ind. 28, 778-81 (1909).

The relation of yeast to flavor in bread. R. A. Wardall. J. Home Econ. 2, 75-91 (1910).

Yeast stimulants in the fermentation of dough. M. P. Neumann and O. Knischewski. Z. ges. Getreidew. 2, 4-14 (1910); Chem. Abstr. 4, 1878 (1910).

The role of yeast in baking. L. Lindet. Compt. rend. 150, 802-4 (1910).

Salt-rising bread and some comparisons with bread made with yeast. H. A. Hohman. J. Ind. Eng. Chem. 4, 20-30, 100-6 (1912).

Shall we bake with yeast? O. Kuhn, W. Dederichs, L. Weil and Wa. Ostwald. Chem. Ztg. 39, 204 (1915); L. Kalusky, W. Dederichs and Wa. Ostwald. Ibid. 320; W. Kiby and L. Kalusky. Ibid. 456; Wa. Ostwald, W. Kiby and L. Kalusky. Ibid 662; Wa. Ostwald and A. Beddies, Ibid. 744.

The political and technical relationship of the substitution of chemical aids for yeast in baking. A. Kraus. Chem. Ztg. 39, 793-4 (1915).

Shall we bake with yeast? Wa. Ostwald. Chem. Ztg. 39, 121 (1915).

The use of certain yeast nutriment in bread making. H. A. Kohman, C. Hoffman, T. M. Godfrey, L. H. Ashe and M. E. Blake. J. Ind. Eng. Chem. 8, 781-9 (1916).

The use of brewers' yeast in bread making. J. L. Baker. J. Soc. Chem. Ind. 36, 836-40 (1917).

Feeding the yeast in bread making. H. A. Kohman. Am. Food J. 12, 35-8 (1917).

Yeast bread compared with baking powder bread in nutritive value. L. V. Gault. J. Home Econ. 15, 689-96 (1923).

Counting yeast cells in dough. H. E. Turley. Cereal Chem. 1, 261-7 (1924).

Effect of ammonium chloride upon the growth of yeast and the hydration of gluten in beer wort. E. I. Fulmer, F. F. Sherwood and V. E. Nelson. Ind. Eng. Chem. 16, 921 (1924).

Fermentation by pressed yeast in bread-making. C. Schweizer. Bull. assoc. chim. suc. dist. 42, 313-20 (1925).

Raising dough by means of pure yeast cultures. G. Seliber and G. Bovshik. Bull. inst. sci. Lesslaft, Leningrad, 10, 56 (1924).

Natural and chemical leavening agents used in the baking process. K. Schmorl. Z. ges. Mühlenw. 4, 74-6 (1927); Chem. Abstr. 22, 4667 (1928).

Vitamin B in yeast bread. E. M. Nelson and M. T. Nelson. Soft Wheat Millers' Assoc. Bull., Nashville, 1-13 (1927); Chem. Abstr. 22, 447 (1928).

The toxicity of wheat flour for yeast. R. Lecourt. Thesis, Univ. Paris and Inst. Pasteur. Ann. Brasserie dist. 26, 14-5, 72-7, 87-91, 102-7, 119-21, 134-7, 153-7 (1927).

Study of wheat bread and brewers' and bakers' yeasts from the point of view of their vitamin B content, and an attempt at the preparation of a bread containing sufficient vitamins. N. V. Veselkin, O. P. Yaroslavtzeva, G. L. Seliber and G. A. Bovshik. Bull. Inst. Sci. Lesslaft 12, 87-96 (1927).

Effects of the constituents of the yeast cell in the fermentation of dough. M. Baetslé. Bull. assoc. élèves inst. sup. ferment. Gand 29, 240-8 (1928); Chem. Abstr. 22, 3239 (1928).

The vitamin B content of wheat bread baked with the addition of different quantities of yeast. A. Scheunert and M. Schiebllich. Biochem. Z. 202, 380-6 (1928).

Frozen yeast. G. Staiger and M. Glaubitz. Z. Spiritusind. 52, 116 (1929).

Significance of flour improving by chemical means in relation to the food value of our bread nutrition. K. Ritter. Proc. Intern. Conf. Flour Bread Manuf. (Prague 1927) 1, 314-5 (1929).

Effect of flour on the fermentative power of yeast. K. Mohs and H. Kuhl. Z. Untersuch. Lebensm. 57, 443-8 (1929).

A technological method for the study of yeast. E. E. Werner and W. Siedhoff. Cereal Chem. 6, 196-201 (1929).

Bread prepared with beer yeast. M. L. Koshkin. Z. Untersuch. Lebensm. 60, 489-95 (1930).

Determination of time of fermentation and fermentation power of yeast. G. Staiger. Brennerei Ztg. 47, 74 (1930).

Poisonous action of cereal flours on yeast. J. Fuchs. Wochschr. Brau. 47, 171-4, 183-6 (1930).

Biochemistry of bread making. L. Elion. Chem. Weekblad 27, 219-27 (1930).

The vitamin content of baking powder and yeast baked goods. Contribution to the comparison of vascular and intestinal yeast extracts with vitamins from yeast. A. Bernfeld and E. Schilf. Biochem. Z. 224, 434-6 (1930).

Report from the laboratory of the Institute for Yeast Industry annexed to the Institute for fermentation industries. G. Staiger and M. Glaubitz. Brennerei Ztg. 48, 160-1 (1931).

The importance of maltose fermentation for estimating the baking value of pressed yeast of modern production. K. Rungaldier. Brauer-Hopfenztg. Gambrinus 58, 96-100 (1931); Chem. Abstr. 25, 4941-2 (1931).

The use of yeast nutrients in the making of bread with rice. L. Borasio. Giorn. Riscicoltura 21, 121-4 (1931); Chem. Abstr. 26, 5153, (1932).

Biological value of the proteins of breads baked from rye and wheat flours alone or combined with yeast or soybean flour. S. K. Kon and Z. Markuze. Biochem. J. 25, 1476-84 (1931).

The effect of sucrose, cooked potato, potassium bromate and malt upon baking strength at various yeast concentrations. R. H. Harris. Can. J. Res. 7, 51-63 (1932).

Variability in experimental baking. II. Yeast variability. R. Weaver, P. Talbott, and D. A. Coleman. Cereal Chem. 10, 617-18 (1933).

Experimental use of dried yeast for baking bread. N. N. Ivanov and Ph. L. Trainina. Schrift. zentr. biochem. Forsch. Inst. Nahr.-Genussmittelind. U.S.S.R. 3, 110-19 (1933).

Compressed yeast and leaven in baking. R. Pajetta. Atti. Congr. intern. panificazione (Rome 1932) 1, 45-7 (1933); Chem. Abstr. 28, 1783-4 (1934).

The use of rational fermentation in bread making by means of selected yeast. S. Camilla. Atti Congr. intern. panificazione (Rome 1932) 1, 281-4 (1933).

Yeast variability and its control in flour gassing-power tests. R. M. Sandstedt and M. J. Elish. Cereal Chem. 11, 368-83 (1934).

Action of top yeast on levosin in solution and in bread dough. R. Geoffroy. Bull. soc. chim. biol. 17, 848-51 (1935).

The mechanism of dough fermentation; note on a method for counting yeast cells in a fermenting dough. A. G. Simpson. Cereal Chem. 13, 50-4 (1936).

The relation between yeast, sugar and fat in cup cakes leavened with yeast. W. Hofmann. Z. Ges. Getreide-Muhlen-Bäckereiw. 24, 178-82 (1937).

Enrichment of biscuits with B₁. Z. N. Khlestkina. Proc. Sci. Inst. Vitamin Res. U.S.S.R. 2, 29-33 (33-4 in English) (1937).

Test baking. I. The technic and some factors affecting fermentation. E. A. Fisher and P. Halton. Cereal Chem. 14, 349-72 (1937).

Action of phosphates in dough. H. Kuhl. Mehl u. Brot 37, No. 31, 1-3 (1937); Chem. Abstr. 32, 8016 (1938).

Effect of yeast extracts on bread doughs. V. Carbonnelle. Ann. zymol. (3) 4, 171-7 (1938).

The varying influence of compressed yeasts of different industrial origin on the gas retention of dough, as recorded by a new instrument, the Chefaro balance. E. Elion. Cereal Chem. 16, 598-610 (1939).

Vitamin B₁ is brought into bread by yeast. E. Satta. Ann. igiene 49, 442-56 (1939).

Improving the nutritive properties of bread. C. N. Frey, A. S. Schultz and L. Atkin. Proc. Food Conf. Inst. Food Tech. 1, 275-8 (1940).

Note on the use of yeast to destroy glutathione in wheat germ for bread making. E. W. Hullett. New Zealand J. Sci. Tech. B22, 44-7 (1940).

Significance of yeast quality in baking with flour from insect-damaged wheat. L. I. Oparin and E. G. Onishchenko. Chem. Abstr. 37, 2827 (1943).

Gas production in yeast fermentation and its applications. III. The baking test. S. Eisenberg. Cereal Chem. 18, 267-99 (1941).

Factors affecting the growth of yeast in fermenting doughs. C. Hoffman, T. R. Schweitzer and G. Dalby. Cereal Chem. 18, 342-9 (1941).

The counting of yeast cells in bread doughs. C. Hoffman, T. R. Schweitzer and G. Dalby. Cereal Chem. 18, 337-42 (1941).

Vitamin B₁ estimation in yeast and bread and stability during bread making. E. R. Dawson and G. W. Martin. J. Soc. Chem. Ind. 60, 241-5 (1941).

First baking of vitamin B₁ white bread. G. W. Martin. Food 10, 82-4 (1941).

The effects of temperature upon the viability and baking properties of dry and moist yeast stored for varied periods. E. J. Thiessen. Cereal Chem. 19, 773-84 (1942).

Yeast variability in wheat variety test baking. K. F. Finney and M. A. Barmore. Cereal Chem. 20, 194-200 (1943).

Bakers' Yeast

Pure bread yeasts. P. Arauner. Pharm. Ztg. 52, 660 (1907).

Infection of bakers' yeast with film-forming yeast. W. Henneberg and M. P. Neumann. Wochschr. Brau. 27, 49-50 (1910).

Testing bakers' yeasts. O. Knischewsky. Z. ges. Getreidew. 2, 272-6 (1910); Chem. Abstr. 5, 2404 (1911).

Contribution to the study of bakers' yeast. E. Kayser. Ann. inst. nat. agron. (2) 12, 345-77 (1913).

Baking yeasts from the factories of the Polish Republic. W. Iwanowski and J. Dembin. Polytech. Warsaw. Przemysl Chem. 12, 349-67 (1928); Chem. Abstr. 22, 4667-8 (1928).

Bakers' yeast. I. Influence of age upon the fermentation time of the yeast. E. Rosenbaum. Z. Untersuch. Lebensm. 59, 607-12 (1930).

The method for estimating the raising power of bakers' yeast. C. Schweizer. Mitt. Lebensm. Hyg. 21, 117-20 (1930).

Leavening effect of aging bakers' yeast. G. Staiger and M. Glaubitz. Brenneri Ztg. 48, 112 (1931).

Bakers' yeast. II. Quick-acting yeast. E. Rosenbaum. Z. Untersuch. Lebensm. 61, 80-4 (1931).

Effect of aging on the activity of bakers' yeast. R. K. Larmour and S. F. Brockington. Can. J. Res. 6, 614-21 (1932).

The development of the manufacture of bakers' yeast in the last two decades, especially with reference to its nutrition with nitrogen-containing material. A. Zscheile. Chem. Ztg. 56, 126-7 (1932).

The influence of the strain of bakers' yeast. G. Mezzadrolì and A. Amati. Ind. saccar. ital. 25, 394-5 (1932); Chem. Abstr. 27, 537 (1933).

Determination of the characteristics of certain baking yeasts. G. Mezzadrolì, A. Amati and E. Pansini-Messina. Congr. intern. tech. chim. ind. agr. (Brussels 1935) 4 tome 3, 227-42 (1935).

Foreign bakers' yeast. E. Rosenbaum. Z. Untersuch. Lebensm. 70, 378-83 (1935).

Bakers' yeast. E. Rosenbaum. Z. Untersuch. Lebensm. 70, 366-78 (1935).

Tests of bakers' yeasts. Z. G. Razumovskaya. Proc. Inst. Sci. Res. Food Ind., Leningrad, 2, No. 2, 127-40 (1935); Chem. Abstr. 30, 5666 (1936).

Preparation of yeast for baking. E. Rosenbaum. Z. Untersuch. Lebensm. 72, 331-51 (1936).

Cultivation of bakers' yeast according to the inflow or the aeration procedure. II. Influence of the duration of fermentation, aeration, amount, dilution and pH on the yield and quality of the yeast. R. Pfundt. Biochem. Z. 291, 237-44 (1937).

Mechanism of carbohydrate dissimilation in bakers' yeast. T. J. B. Stier and J. N. Stannard. J. Cellular Comp. Physiol. 10, 79-92 (1937).

Liquefaction of yeast during storing. E. M. Popova. Biokhimiya 2, 90-7 (1937)(German summary).

Pressed top yeasts for bakeries. R. Geoffroy and G. Labour. Bull. assoc. chim. 54, 854-64 (1937).

Leavening yeast. P. Pelshenke and A. Schulz. Vorratspflege Lebensmittelforsch. 5, 154-63 (1942).

Beer yeast

The action of beer yeast on amino acids. J. Effront. Compt. rend. 146, 779-80 (1908).

Purifying brewery yeast by means of carbonic acid. F. Hayduck. Wochschr. Brau. 27, 17-8 (1910).

Brewers' yeast as an article of diet. F. Hayduck. Umschau 15, 195-7 (1911).

Influence of acids on infected brewery yeasts in the laboratory and under practical conditions. G. Feuerstein. Wochschr. Brau. 28, 16-8 (1911).

Studies in the juice of beer yeast. E. Kayser. Compt. rend. 152, 975-7 (1911).

Investigations on expressed extract of beer yeast. E. Kayser. Chem. Ztg. 35, 472 (1911).

Action of beer yeast on peptic digestion. G. Piccoli. Arch. farmacol. sper. 12, 505-32 (1911).

Biochemical synthesis of the glucosides of alcohols by aid of a ferment contained in air-dried beer yeast, α -propylglucoside and α -allylglucoside. E. Bourquelot, H. Hérissé and M. Bridel. Compt. rend. 156, 1493-5 (1913).

The mechanism of the action of beer yeast on gastric digestion and fermentation. I. Novi. Rend. accad. sci. Bologna, Nov., 1913.

Observations pertaining to the crystals occurring in beer yeasts and keg sediments. H. Will. Z. ges. Brauw. 36, 253-8, 269-73, 285-9 (1913).

Beer yeast in industry and therapy. E. Carlinfanti. Ann. chim. applicata 2, 121-8 (1914).

Beer yeast a valuable feed. P. Donhoff. Z. Spiritusind. 37, 263, 269 (1914).

Peroxidase in beer yeast. A. Bach. Arch. sci. phys. nat. (4) 39, 497-507 (1915).

Cause of the activation exerted by beer yeast on the gastric juice. II. G. Piccoli. Arch. farmacol. sper. 19, 488-504 (1915).

Changes in the physiological conditions of brewery yeasts. O. Furrnrohr. Z. ges. Brauw. 38, 279-9, 305-7, 313-6, 345-7, 353-5, 361-4 (1915).

The food-stuff content of various brewery yeasts as well as the new so-called mineral yeast. D. Meyer. Landw. Wochschr. Prov. Sachsen 18, No. 45 (1916); Chem. Abstr. 13, 357-8 (1919).

Van Lebedeff's yeast maceration juice. M. W. Beijerinck and J. J. van Hest. Folia Microbiol. 4, 107-18 (1916).

Sensitiveness of some enzymes of brewers' yeast. Th. Bokorny. Allg. Brauer-Hopfen-Ztg. 56, 395-7, 433-4, 465-7 (1916); Chem. Abstr. 10, 2612 (1916).

Brewers' dried yeast. R. A. Wittermann. Pure Products 13, 475-7 (1917).

Use of brewers' yeast in bread making. J. Baker. J. Soc. Chem. Ind. 36, 836-9 (1917).

Nutrition of yeast in light beers. F. Schönfeld and H. Krumhaar. Wochschr. Brau. 35, 213-4 (1918).

Acclimatization of brewers' yeast to arsenic. J. Effront. Compt. rend. soc. biol. 83, 806-7 (1920).

Nutritive value of yeasts. K. W. Jötten. Arb. Reichsgesundheitsamt 52, 339-74 (1920).

Resistance of pressed yeast and beer yeast towards relatively large quantities of sulfuric acid, in relation to the internal condition of the cells. W. Henneberg and M. Bohmer. Wochschr. Brau. 38, 237-8, 245-6 (1921).

Preliminary note on a stable silver vitamin compound obtained from brewers' yeast. L. Seidell. Pub. Health Repts. U. S. Pub. Health Serv. 36, 665-70 (1921).

Some uses of brewery by-products. A. L. Davidson. Can. Chem. Met. 8, 233-4 (1924).

Use of brewery yeast in bread making. D. Van Haelen. Bull. assoc. élèves inst. sup. ferment. Gand. 24, 326-40 (1923); Chem. Abstr. 18, 3656 (1924).

Yeast production in relation to brewery worts. N. C. Beetlestone. J. Inst. Brewing 31, 453-63 (1925).

Concentrated antineuritic vitamin prepared from brewers' yeast. A. Seidell. J. Biol. Chem. 67, 593-600 (1926).

The absorbing power of yeasts. J. Effront. Petit J. brasseur 33, 1289-95 (1925); Chem. Abstr. 20, 2559 (1926).

Some nutrition experiments with brewers' yeast with especial reference to its value in supplementing certain deficiencies in experimental rations. M. T. Smith and E. G. Hendrick. Pub. Health Repts. U. S. Pub. Health Serv. 41, 201-7 (1926).

Vitamins. L. Scotti-Foglieni. Boll. soc. biol. sper. 1, 159-60 (1926); Ber. ges. Physiol. exptl. Pharmakol. 38, 50 (1926).

Beer yeast in modern pharmacology. Nucleates. A. Hutin. La nature 55, 2^e sem., 370-1 (1927).

Philothion. II. G. Rossi. Zymologica 2, 105-15 (1927); Chem. Abstr. 22, 1598 (1928).

Phosphorus and calcium in the blood after injections of beer yeast. C. T. Urechia and G. Popoviciu. Compt. rend. soc. biol. 97, 1009-11 (1927).

Influence of the physiological condition of yeast on the flavor of beer. J. Raux. Brasserie et malterie 17, 181-3 (1927); Chem. Abstr. 21, 3703 (1927).

Fermentation of glucose by beer yeast in the blood plasma. E. J. Bigwood and A. Wuillot. Compt. rend. soc. biol. 96, 410-3 (1927).

Influence of storage temperature of yeast under water on fermentation, reproduction and acid formation in wort. F. Stockhausen and F. Windisch. Wochschr. Brau. 44, 478-81 (1927).

Uniform behavior of bottom fermentation beer yeast in respect of fermentation, reproduction, and acid formation, on storage under water at various temperatures. F. Stockhausen and F. Windisch. Wochschr. Brau. 44, 557-64, 573-9 (1927).

Influence of preliminary treatments on the properties of top and bottom yeast. H. Fink and H. v. Euler. Z. physiol. Chem. 163, 193-201 (1927).

Separation of antineuritic vitamins by means of fuller's earth. Nutritive utilization of beer yeast. L. Randoin and R. Leccq. Compt. rend. soc. biol. 99, 148-50 (1928).

The water content of yeast cells in suspension in brewery worts. R. H. Hopkins. J. Inst. Brewing 34, 39-41 (1928).

Yeast cell and yeast-cell cake. N. C. Bettlestone. J. Inst. Brewing 34, 22-38 (1928).

Selective fermentation of glucose and fructose by brewers' yeast. R. H. Hopkins. Biochem. J. 22, 1145-56 (1928).

Relations between time and temperature of storage of beer yeast and their joint influence on fermentation, reproduction and acid formation. F. Stockhausen and F. Windisch. Wochschr. Brau. 45, 31-7, 49-57 (1928).

Activity of beer yeast in presence of caffeine. J. Bellisai. Arch. intern. pharmacodynamie 35, 474-9 (1929).

The activity and nitrogen content of fractions obtained in the concentration of the antineuritic vitamin of brewers' yeast. A. Seidell. Rec. trav. chim. Pays-Bas 48, 855-9 (1929).

Further progress towards the isolation of the antineuritic vitamin (vitamin B) from brewers' yeast. A. Seidell. J. Biol. Chem. 82, 633-40 (1929).

Top fermentation by means of pure yeast cultures. R. Morlion. Bull. assoc. élèves inst. sup. ferment. Gand. 30, 55-75 (1929); Chem. Abstr. 23, 3538 (1929).

Studies on top yeast. H. v. Euler and H. Nilsson. Z. physiol. Chem. 181, 281-90 (1929).

Beer yeast, powdered for six years. N. Floresco. Bul. fac. Stiinte Cernauti 3, No. 1-2, 208-20 (1929)(in French).

The selective fermentation of glucose and fructose by brewers' yeast. H. Ivekovic. Biochem. J. 24, 4-5 (1930).

Oxido-reduction--beer yeast-- the influence of desiccation. R. Fabre and H. Simonnet. Compt. rend. 191, 1075-7(1930).

Influence of sediment of wort on yeast and fermentation (in brewing). C. Schuster. Wochschr. Brau. 47, 1-2 (1930).

The hydrogen-ion concentration sensitivity of respiring and fermenting beer yeast. Transformation of fermentation into respiration. K. Trautwein and Josef Wassermann. Biochem.-Z. 236, 35-53 (1931).

Beer yeast. Experimental conditions of its action on cystine. R. Fabre and H. Simonnet. Compt. rend. 192, 852-4 (1931).

Studies on oxidation-reduction phenomena. IV. Research on beer yeast. R. Fabre and H. Simonnet. Bull. soc. chim. biol. 13, 923-42 (1931).

Influence of rice on beer yeast. Mosuke Matsuyama. Wochschr. Brau. 48, 479-81 (1931).

The action of preparations of beer yeast on chemical processes in the liver and muscles of exercising animals. I. C. Pi-Suñer Bayo, G. Liss and T. Osuka. An. soc. españ. fis. quim. 29, 193-9 (1931).

The influence of yeast fungus on the digestion of protein. J. Washio. Japan. Z. Mikrobiol. Path. 26, 219-24 (1932); Chem. Abstr. 26, 5639-40 (1932).

Brewery yeast in the chemical industry. Faber. Brasserie et malterie 21, 13-5 (1931); Chem. Abstr. 25, 2516 (1931).

Putrefaction products of beer yeast. I. K. Yoshimura and K. Nishida. J. Agr. Chem. Soc. Japan 8, 309-12 (1932).

The growth of beer yeast. I. T. Shimodaira. J. Agr. Chem. Soc. Japan 8, 876-80 (1932); Bull. agr. Chem. Soc. Japan 8, 75 (1932).

Brewers' grains as a food and as original material in the preparation of yeast. A. A. Lazarev. J. Applied Chem., Leningrad, 6, 139-49 (1933).

Selection of yeasts. M. Schütza. Wochschr. Brau. 50, 368-70 (1933).

Final attenuation determined by composition of wort and not by type of yeast. G. Isotti. Wochschr. Brau. 50, 181-2 (1933).

Growth, fecundity, duration of life and inherited characteristics of guinea pigs treated with large doses of beer yeast (vitamin B). Piera Marangoni. Boll. soc. ital. biol. sper. 8, 1753-6 (1933).

Putrefactive products of beer yeast. K. Nishida. Bull. Chem. Soc. Japan 8, 14-22 (1933).

Yeast troubles (in brewing). J. Raux. Brasserie et malterie 23, 279-85, 295-301 (1933); Chem. Abstr. 28, 2122 (1934).

Transformation of the cytochrome spectrum of beer yeast. H. Fink and E. Berwald. Biochem. Z. 258, 141-6 (1933).

The pharmacodynamic action of beer yeast and its influence on metabolism in experimental avitaminosis B. O. Kauffmann-Cosla and S. Cerin. Bull. soc. chim. biol. 16, 85-95 (1934).

Heteroxanthine isolated from yeast. P. W. Wiardi and B. C. P. Jansen. Rec. trav. chim. Pays-Bas 53, 205-8 (1934).

Detection of addition of beer bottom fermentation yeast to pressed yeast. A. Boas. Mitt. Lebensm. Hyg. 25, 22-39 (1934).

The assimilation of nitrogen by brewers' yeast. R. H. Hopkins. J. Inst. Brewing 41, 30-3 (1935).

The influence of pH on the rate of (brewers') yeast growth in a synthetic medium containing asparagine. C. Taxner. J. Inst. Brewing 41, 27-30 (1935).

The action of deuterium oxide in low concns. on the course of gas production by brewers' yeast. C. S. Shoup and S. L. Meyer. J. Penn. Acad. Sci. 10, 127-31 (1935).

Action of heat on brewers' yeast. N. Floresco. Bul. Fac. Stiinte Cernauti 9, 316-7 (1935); Chem. Abstr. 30, 7277 (1936).

Yeast and fermentation. P. Petit. Brasserie et malterie 25, 209-13 (1935); Chem. Abstr. 29, 8225 (1935).

The peptonization of brewers' yeast and new outlets therefor. L. Buguin. Ann. zymol. (2) 2, 79-87 (1935).

Top yeasts. H. v. Euler. Arkiv Kemi Mineral. Geol. 12B, No. 11, 4 pp (1935).

Officinal brewers' yeast. H. Penau. Bull. sci. pharmacol. 42, 352-66 (1935).

The distinguishing characters of flavobacterium proteum (sp. nov.), the common rod bacterium of brewers' yeast. Y. L. Shimwell. J. Inst. Brewing 42, 348-50 (1936).

Autolysis of some yeast cultures. B. Drews. Biochem. Z. 288, 207-37 (1936).

Importance of beer yeast as a source of vitamins. F. Harreis and H. Schneider. Wochschr. Brau. 54, 116-17 (1937).

Changes occurring in biological (brewery) samples during transport. H. Schnegg. Z. ges. Brauw. (n.s.) 60, 13-36 (1937).

Vitality of beer yeasts. F. Stockhausen and R. Koch. Wochschr. Brau. 54, 73-5, 83-5, 93-6 (1937).

Brewers' pure yeast, a predominating influence on beer quality. S. Laufer. Am. Brewer 70, No. 4, 27-32 (1937).

Cataphoretic studies on wine and brewers' yeast. Cataphoretic properties of yeast. K. Hennig and H. Ay. Biochem. Z. 299, 123-32 (1938).

Commercial utilization of wet brewers' yeast. K. Silbereisen. Wochschr. Brau. 55, 306-9 (1938).

The treatment of beer yeast with sulfuric acid to destroy B. coli. I. Ya. Veselov and A. L. Kleimenova. Mikrobiologiya 8, 69-73 (1939).

Influence of purification of brewers' yeast by the pharmacopeial method upon its biological value. Z. Markuze and St. Biniecki. Arch. Chem. Farm., Warsaw, 4, 37-40 (40 in English) (1939); Chem. Abstr., 34, 785 (1940).

The utilization of brewers' yeast. J. S. Wallerstein. Commun. Sci. Pract. Brew. No. 5, 33-8 (1939).

The utilization of brewers' yeast. H. Kringstad. Tids. Hermetikind. 26, 217-18 (1940); Chem. Abstr. 35, 580 (1941).

The production and medicinal and pharmaceutical application of beer yeast, dried yeast and yeast extract. Z. Bari. Ber. ungar. pharm. Ges. 16, 95-113 (1940); Chem. Abstr. 34, 4223 (1940).

Comparative study of the composition of beer yeast and edible yeast. Are beer yeast and "artificial yeast" equivalent? F. Just. Wochschr. Brau. 57, 227-31 (1940).

Nutritive yeast from brewers' yeast surplus. K. Schneider and H. Munder. Wochschr. Brau. 57, 57-8 (1940).

The riboflavin content of poultry feedstuffs. T. G. Culton and H. R. Bird. Poultry Sci. 20, 3-6 (1941).

Utilizing brewers' waste yeast. E. W. Coates. Modern Brewery Age 26, No. 3, 50 (1941); Wallerstein Labs. Commun. 4, No. 13, 212 (1941).

The utilization of waste brewers' yeast. R. V. Siebel, P. J. F. Weber and E. Singruen. Modern Brewery Age 26, No. 4, 63-9 (1941).

Evaluation of brewery waste yeast. K. Nehring and W. Schramm. Biedermanns Zentr., Abt. B, 13, 163-79 (1941).

Enrichment of white bread with vitamin B complex through the addition of debitterized brewers' yeast. R. Schwarz, S. Laufer, L. Laufer and M. W. Brenner. Ind. Eng. Chem. 34, 480-3 (1942).

Some observations on yeast degeneration (in brewing). G. B. Sippel. Am. Brewer 75, No. 11, 9, 35 (1942).

Practical application of yeast collection and processing. T. C. Hoffenreffer, Jr. Modern Brewery Age 30, No. 5, 39-40, 83-4 (1943).

Microbiological examination and evaluation of brewers' yeast. J. B. Rehm. Wallerstein Labs. Commun. 6, 191-7 (1943).

Bios

The bios problem in yeast investigation. P. Lindner. Deut. Essigind. 24, 103-5 (1920).

The "bios" of Wildiers and the cultivation of yeast. M. Ide. J. Biol. Chem. 46, 521-3 (1921).

The "bios" of Wildiers and the cultivation of yeast. M. B. MacDonald and E. V. McCollum. J. Biol. Chem. 46, 525-7 (1921).

Need of "bios." P. Biourge. Compt. rend. soc. biol. 85, 254-6 (1921).

Action of yeast-growth stimulant. O. K. Wright. Biochem. J. 16, 137-42 (1922).

Water-soluble B and bios in yeast growth. E. I. Fulmer and V. E. Nelson. J. Biol. Chem. 51, 77-81 (1922).

Studies on yeast V. Is bios a single substance? E. I. Fulmer and V. E. Nelson. Proc. Iowa Acad. Sci. 29, 371 (1922).

The synthesis of "bios" by yeast grown in a solution of purified nutrients. M. B. MacDonald. J. Biol. Chem. 56, 489-99 (1923).

The bios requirements of bakers' yeast. J. J. Willaman and A. G. Olsen. J. Biol. Chem. 55, 815-36 (1923).

Multiple nature of bios. E. I. Fulmer, W. W. Duecker and V. E. Nelson. J. Am. Chem. Soc. 46, 723-6 (1924).

The fractionation of bios, and comparison of bios with vitamins B and C. G. H.W. Lucas. J. Phys. Chem. 28, 1180-200 (1924).

Isolation from autolyzed yeast of a crystalline substance melting at 223°, having the properties of a bios. W. H. Eddy. R. W. Kerr and R. R. Williams. J. Am. Chem. Soc. 46, 2846-55 (1924).

The "bios" question. F. W. Tanner. Chem. Rev. 1, 397-472 (1925).

The reproduction of yeast in solutions in which no bios has been added. D. Whiteman. Trans. Roy. Soc. Can. (3) 19, III, 24-5 (1925).

Studies on the growth of yeast. I. The influence of volume of culture medium employed. G. L. Peskett. Biochem. J. 19, 464-73 (1925).

Control of "bios" testing and the concentration of a "bios." R. J. Williams, J. L. Wilson, and F. H. von der Ahe. J. Am. Chem. Soc. 49, 227-35 (1927).

Studies on the "bios question." G. T. Wallace and F. W. Tanner. Centr. Bakt. Parasitenk., Abt. II, 76, 1-17 (1928).

Isolation and identification of bios I; its absorption by and recovery from yeast. E. V. Eastcott. Trans. Roy. Soc. Can. (3) 22, III, 267 (1928).

Effect of "bios" on the growth and metabolism of certain yeasts. A. M. Copping. Biochem. J. 23, 1050-63 (1929).

Bios. VI. VII. B. Suzuki, K. Matsusita and K. Aoki. Proc. Imp. Acad., Tokyo, 6, 334-6 (1930).

Further fractionation of yeast nutritives and their relationship to vitamin B and Wildiers' "bios." R. J. Williams and E. M. Bradway. J. Am. Chem. Soc. 53, 783-9 (1931).

Accessory food substances for osmophilic yeasts. II. Comparison of honey bioactivator with bios. A. G. Lockhead and L. Farrell. Can. J. Res. 5, 539-43 (1931).

Effect of inositol, of Bios II, and of both together in the culture medium, on the reproduction of twelve kinds of yeast. H. Stantial. Trans. Roy. Soc. Can. (3) 26, III, 163-4 (1932).

Fractionation of Bios II. W. L. Miller, E. V. Eastcott and E. M. Sparling. Trans. Roy. Soc. Can. (3) 26, III, 165-9 (1932).

Bios IX. So-called Bios I and II. Y. Hamamura and M. Chikamatsu. J. Agr. Chem. Soc. Japan 9, 1018-21 (1933).

Wildiers' bios. The fractionation of bios from yeast. W. L. Miller, E. V. Eastcott and J. E. Maconachie. J. Am. Chem. Soc. 55, 1502-17 (1933).

Wildiers' bios. W. L. Miller. Trans. Roy. Soc. Can. (3) 28, III, 185-7 (1934).

Chemistry of cell growth I. O. Rahn. Cold Spring Harbor Symposia 2, 57-62 (1934).

Wildiers' bios. W. L. Miller. Trans. Roy. Soc. Can. (3) 29, III, 163-5 (1935).

Influence of inositol, bios II A and bios II B on the reproduction of twelve species of yeast. A new constituent of bios. L. N. Farrell. Trans. Roy. Soc. Can. (3) 29, III, 167-73 (1935).

Distribution of growth substances of the bios group in normal animal tissues and tumors. C. Dittmar. Biochem. Z. 279, 99-105 (1935).

Effect of the composition of the medium upon the growth of yeast in the presence of bios preparations. I. The effect of magnesium salts. E. I. Fulmer, L. A. Underkofler and J. B. Lesh. J. Am. Chem. Soc. 58, 1356-8 (1936).

Dependence of the effect of bios on the conditions of the medium. J. Hanak and L. Schwarz. Chem. Obzor 11, 81-2 (83 in English) (1936); Chem. Abstr. 30, 7142 (1936).

Plant-growth substances XA1. Isolation of bios I (meso-inositol) from yeast. F. Kogl and W. van Hasselt. Z. physiol. Chem. 242, 74-80 (1936).

Effect of the composition of the medium upon a growth of yeast in the presence of bios preparations. II. The response of several strains of Saccharomyces cerevisiae. J. B. Lesh, L. A. Underkofler and E. I. Fulmer. J. Am. Chem. Soc. 60, 2505-7 (1938).

Bios. I. Effects of β -alanine, meso-inositol and vitamins B₁, B₂ and B₆ on Saccharomyces cerevisiae. N. Okati. J. Agr. Chem. Soc. Japan 14, 1479-84 (1938).

Growth-substance content of yeast. C. Enders and H. Hegendorfer. Biochem. Z. 299, 346-58 (1938).

Growth substances in yeast. A. L. Schade. Commun. Sci. Pract. Brew., No. 4, 36-40 (1938).

Vegetable growth substances of the bios group. A. M. A. von Santen and V. J. Koningsberger. Tabulae Biologicae 17, 241-66 (1939).

The bios requirements of various strains of Saccharomyces cerevisiae. C. Rainbow. J. Inst. Brewing 45, 533-45 (1939).

The effect of bios on the nitrogen metabolism of yeast. I. Ammonia and carbamide. A. S. Schultz, L. Atkin and C. N. Frey. J. Biol. Chem. 135, 267-71, (1940).

New facts about growth substances. Nature and interrelationship of bios constituents. J. S. Wallerstein. Wallerstein Labs. Commun. 4, 14-19 (1941).

The identification of bios V and vitamin B₁ and of a constituent of bios VII solution as vitamin B₆; their effect upon the reproduction of Saccharomyces hanseniaspora balbyensis, yeast 2335, and S. galactosus. C. Marchant. Can. J. Res., Sec. B, 20, 21-31 (1942).

The antibiotin of desthiobiotin. V. G. Lilly and L. H. Leonian. Science (n.s.) 99, 205-6 (1944).

The possible synthesis of biotin from desthiobiotin by yeast and the antibiotin effect of desthiobiotin for Lactobacillus casei. K. Dittmer, D. B. Melville and V. du Vigneaud. Science (n.s.) 99, 203-5 (1944).

Books

Anon. Beiträge zur Physiologie der Hefe. Eine Sammlung
1910 von Arbeiten des Instituts für Gärungswerbe in Berlin. 168 pp.

Anon. Compressed yeast as a household remedy. The Fleischmann Co.,
1919 New York. 22 pp.

Anon. Die Hefereinzucht in der Entwicklungsgeschichte der Brauerei.
1931 Berlin: Ges. für die Geschichte u. Bibliogr. des Brauwesens.
E. V. 166 pp.

Anon. Fleischmann's irradiated yeast for calves; a study conducted
1938 at the Pennsylvania State College in Cooperation with the
Fleischmann laboratories. New York: 12 pp.

Anon. American type culture collection. Catalog of cultures of
1938 bacteria and fungi. 4th Ed. Washington: Georgetown University
School of Medicine. 160 pp.

Anon. Practical Feeding Facts. Northwestern Yeast Co. Chicago.
1934 Pamphlet.

Anon. Brewers' yeast in the news. Brewing Industry Foundation,
1944 New York, 4 pp.

Anon. Food yeast. A venture in practical nutrition. London:
1944 Colonial Food Yeast, Ltd. Gr. Brit. Colonial Office. 28 pp.

Bersch, W.
1910 Hefen, Schimmelpilze und Bakterien. Darstellung der
Lebensbedingungen, Eigenschaften und Verwendung der technisch
wichtigen Mikroorganismen in der Praxis. Wien: 470 pp.,

Chapman, A. C. and F. G. S. Baker
1906 An atlas of the saccharomycetes. Being a collection of photo-
micrographs representing the commoner and many of the rarer
yeast species. London: The Brewing Trade Review.

Delbrück, M. E. J. and F. Hayduck
1911 Die Gärungsführung in Brauerei, Brennerei und Presshefefabrik
auf Grund der Arbeiten und Erfahrungen des Instituts für
Gärungsgewerbe in Berlin. Berlin: P. Parey. 225 pp.

Diddens, H. A. and J. Lodder
1942 (?) Die anaskosporogenen Hefen. 2 Hälfte. Amsterdam: Noord-
Hollandsche U. M. 511 pp.

Euler, H. V. and P. Lindner
1915 Chemie der Hefe und der alkoholischen Gärung. Leipzig:
Akademische Verlagsanstalt m. b. H. 350 pp.

Guilliermond, A.
1920 The yeasts. Translated and revised with the original author
by F. W. Tanner. New York: John Wiley and Sons

Hayduck, F., ed.
1915 Chemische Technologie der Gärungsgewerbe, Nahrungs- und
Genussmittel. In Verbindung mit L. Eberlein, G. Ellrodt
u. a. Braunschweig: F. Vierweg & Sohn. 516 pp.

Heller, H.
1931 Biologische Brauerei-Betriebskontrolle; allgemein-botanische
Grundlagen, Pilzkunde und Hefereinzucht. 3rd ed., revised
by H. Ross. Munich: R. Oldenburg. 172 pp.

Henrici, A. T.
1930 Molds, yeasts and actinomycetes. A handbook for students
of bacteriology. New York: John Wiley & Sons. 296 pp.

Jørgensen, A.
1925 Microorganisms and fermentation. 5th Ed. Charles Griffin &
Co. Ltd., London. 467 pp.

1936 Practical management of pure yeast; the application and ex-
amination of brewery, distillery and wine yeasts. 3rd ed.,
revised (by Alfred Hansen) Philadelphia: J. B. Lippincott
Co., 111 pp.

Josephson, K.
1923 Über die Reinigung von Hefen-Saccharase. Stockholm: Almqvist
& Wiksell; Berlin: R. Friedländer. 21 pp. (Also Arkiv Kemi
Mineral. Geol. 8, No. 26, 21 pp.)

Kiby, W.

- 1912 Handbuch der Presshefenfabrikation. Braunschweig: F. Vieweg und Sohn. 669 pp.

Lecoq, R.

- 1928 Recherches expérimentales sur les vitamines B continües dans les levures, dans leurs extraits et dans leurs milieux de culture. Paris: Vigot freres. 68 pp.

Lindner, P.

- 1930 Mikroskopische und biologische Betriebskontrolle in den Gärungsgewerben (not full title). 6th ed., revised. Berlin: P. Parey. 692 pp.

Lodder, J.

- 1934 Die Hefesammlung des Centralbureau vor Schimmelcultures. Beiträge zu einer Monographie der Hefearten. Tl 2. Die anaskosporgenen Hefen. Hälfte 1. Amsterdam: M. V. Noord-Hollandsche Uitgevers Maatsch. Akad. Verlagsges. in Kom. 256 pp.

Rudolph, W.

- 1941 Die Vitamine der Hefe. Stuttgart: Wissenschaftliche Verlagsges. 130 pp.

Schulein, J.

- 1935 Die Bierhefe als Heil-, Nahr-, und Futtermittel. Dresden: Steinkopff. 200 pp.

-
- 1938 Die Bierhefe als Heil-, Nahr und Futtermittel 2nd. revised and enlarged ed. Dresden and Leipsic: T. Steinkopff. 262 pp.

Stelling-Dekker, N. M.

- 1931 Die Hefesammlung des Centralbureau von Schimmelcultures. Beiträge zu einer Monographie der Hefearten. Tl. 1. Die sporogenen Hefen. Amsterdam: N. V. Noord-Hollandsche Uitgevers Maatsch. Akad. Verlagsges. in Kom. 546 pp.

Smyth, H. F. and Walter L. Obold

- 1930 Industrial microbiology; the utilization of bacteria, yeasts and molds in industrial processes. Baltimore: The Williams & Wilkins Co. 313 pp.

Thomas, P.

- 1922 Recherches biochimiques sur les proteiques de la levure Paris: G. Ficker. 166 pp.

Van Damme, C.

1932 L'aerolevure moderne. Brussels: M. Cock. 161 pp.

Vogel, H.

1939 Die Technik der Bierhefeverwertung. Stuttgart: F. Enke.
95 pp.

1943 Utilization of brewers' yeast by H. Vogel, translated from
the German by F. T. Schmidt. New York: Schwarz laboratories
52 pp.

Wagner, F.

1931 Die chemisch-technische Fach-und Patentlitteratur über
Presshefe und Gärungsalkohole 1914-1930. Aussig: Selbstverlag.
249 pp.

1936 Presshefe und Gärungsalkohole dargestellt an Hand der Patent
und Fachlitteraturen 1914-1935. France: F. Wagner, Ponthier
(S & M) 288 pp.

Walter, F. G.

1940 The manufacture of compressed yeast. Chapman and Hall Ltd.
London. 254 pp.

Weber, A. P.

1936 L'influence des hormones cristallisées sur la croissance de
certaines especès de levures. Paris: J. Dumoulin. 77 pp.

Winckel, M.

1916 Die wirtschaftliche Bedeutung der Hefe als Nahrungs-, Futter-
und Heilmittel. Munich: C. Gerber. 31 pp.

Effect on Cancer

Effect of tumor hydrolyzates, hydrolyzates of embryonic tissues
and of Saccharomyces cerevisiae on the development of neoplasms.

N. C. Laclau and I. L. Imaz. Compt. rend. soc. biol. 92, 841-2 (1925)

The chemotherapy of cancer. N. C. Laclau, I. L. Imaz and E. V. Zap.
Compt. rend. soc. biol. 92, 840-1 (1925).

The effect of inhibition of connective tissue growth by means of
substances present in tissue extracts: I. The resistance to malignant
disease. II. The inhibition of normal growth. III. Experiments with
the Jensen rat sarcoma. T. B. Heaton. J. Path. Bact. 32, 565-94
(1929).

The experimental investigation of the effect of yeast and lemon juice upon the urinary quotients in avitaminosis A as a contribution to the pathological physiology of tumors of dietary origin. H. R. Kanitz and R. Sinke. Z. Krebsforsch. 45, 40-6 (1936).

Influence of a water-soluble cancerigenic compound on the carbohydrate metabolism of yeast. Y. Pourbaix. Compt. rend. soc. biol. 126, 92-4 (1937).

Action of carcinogenic agents on the metabolism of glucose by surviving tissues or living yeast. Y. Pourbaix. Acta Intern. Union Cancer 3, 31-68 (1938).

Causes of cancer and therapeutic applications based upon them. J. C. McLeod and L. J. Ravenel. J. S. C. Med. Assoc. 34, 37-47 (1938).

Effect of feeding boiled yeast on experimental cancer. J. Maisin, Y. Pourbaix and P. Calymaex. Compt. rend. soc. biol. 127, 1477-8 (1938).

Inhibiting effect of yeast feeding on the experimental production of liver cancer. W. Nakahara, T. Huziware and K. Mori. Gann 33, 57-65 (1939).

Action of yeast extract on transplanted and spontaneous malignant tumors in mice. R. Lewisohn, C. Leuchtenberger, R. Leuchtenberger, D. Laszlo and K. Block. Cancer Res. 1, 799-806 (1941).

Experimental liver cancer in rats and its inhibition by rice-bran extract, yeast and yeast extract. K. Sugiura and C. P. Rhoads. Cancer Res. 1, 3-16 (1941).

Treatment of spontaneous breast adenocarcinomas in mice with extracts of spleen or yeast. R. Lewisohn, C. Leuchtenberger, R. Leuchtenberger and D. Laszlo. Am. J. Path. 17, 251-60 (1941).

Prevention of tumor growth (carcinoma 2163) by intravenous injections of yeast and vitamins. R. Lewisohn, C. Leuchtenberger, R. Leuchtenberger, D. Laszlo and K. Bloch. Science (n.s.) 94, 70-1 (1941).

The effect of yeast feeding upon experimentally produced liver cancer and cirrhosis. K. Sugiura and C. P. Rhoads. Cancer Res. 2, 453-9 (1942).

Production of enlarged cells in yeast treated with carcinogenic hydrocarbons. R. Bauch. Naturwissenschaften. 30, 263-4 (1942).

Influence of a polished rice diet upon spontaneous mammary cancers in mice treated with yeast extract. R. Lewisohn, C. Leuchtenberger, D. Laszlo and Z. Dische. Cancer Res. 2, 818-22 (1942).

Cane juice and molasses for growing

Remarks on A. Marbach's new process for the production of yeast from sugar and mineral salts. A. Kossowicz. Oesterr. Chem. Ztg. (n.s.) 18, 87 (1915).

Nitrogen content of (beet) molasses and yield of yeast. G. Ellrod Brenner. Ztg. 35, 8183 (1918); Chem. Abstr. 14, 794 (1920).

The utilization of molasses. H. Arnstein. La. Planter Sugar Mfr. 68, 76-8, 125-6, 191-3, 209-10, 221-5, 238-9 (1922).

Yeast from sugar-beet molasses. H. Deut. Zuckerind. 49, 97-8 (1924).

The production of pressed yeast from molasses. L. Elion. Z. angew. Chem. 39, 1584-5 (1926).

The utilization of molasses. W. E. Cross. Rev. ind. agr. Tucumán 17, 81-122 (1926).

Beet molasses as raw material for the production of yeast by the aeration process. H. Claassen. Z. Ver. deut. Zucker-Ind. 76, Tech. Th., 349-68 (1926).

Certain by-products of the sugar industry. Their production and use in South Africa. G. C. Dymond. Planter Sugar Mfr. 79, 3 (1927).

By-products of the sugar industry. W. Scott. Planter Sugar Mfr. 79, 368-9, 381 (1927).

Nitrogenous constituents of molasses and their bearing on its value. H. Claassen. Z. Ver. deut. Zucker-Ind., Tech. l., 78, 371-84 (1928).

Several factors influencing the yield of yeast from molasses. G. Mozzadrolì and P. Veremeenco. Giorn. chim. ind. applicata 11, 531-6 (1929).

Edible yeast. R. V. Givartovskii. Izvest. Tsentral. Nauch. Issledov. Inst. Pischevoi Vkusovoi Prom. 1930, 24 pp.; Chem. Abstr. 28, 231 (1934).

Factors influencing the yield of yeast from molasses. G. Mezzadrolì and P. Veremeenco. *Chimie & industrie*, Special No., 502-9 (March, 1930).

The economic significance of lowering the cost of yeast and alcohol production from molasses. H. Claassen. *Deut. Zuckerind.* 55, 935 (1930).

Molasses and yeast food (Report from the Experiment Station for yeast industry and fermentation industries). G. Staiger. *Brennerei Ztg.* 49, 122 (1932); *Chem. Abstr.* 27, 2757 (1933).

The question of the suitability of molasses from various sources for the production of bakers' yeast. H. Claassen. *Deut. Zuckerind.* 57, 333-4 (1932).

Sugar by-products and profits. H. Arnstein. *Facts about Sugar* 27, 477-80 (1932).

The synthesis of yeast. H. Brahner. *Tek. Tid., Kemi*, 62, 25-30, 36-40 (1932).

Yeast gets a new job. The Olivarius process for recovering sucrose from blackstrap molasses. W. H. Young. *Food Industries* 6, 314-15 (1934).

The manufacture of yeast and alcohol. G. Spengler. *Deut. Zuckerind.* 59, 61-2 (1934).

Clarification of molasses for yeast making. L. van der Snickt. *Bull. assoc. élèves inst. sup. ferment. Gand* 35, 261-4, 286-7 (1934); *Chem. Abstr.* 29, 2295-6 (1935).

Means for utilization of waste molasses. Production of yeast on sugar estates. V. M. Hinchy. *Intern. Sugar J.* 37, 296-7 (1935).

The influence of physical-chemical factors and of the micro flora of molasses upon the yield and quality of the yeast. S. Poznyak. *Brodil'naya Prom.* 11, No. 5, 11-17; *Chem. Abstr.* 31, 5939 (1937).

Substances promoting yeast growth in beet molasses. R. Illies. *Z. Spiritusind.* 60, 329-30, 338-9 (1937).

Manufacture of yeast from molasses. S. Rajagopal. *Proc. Soc. Biol. Chemists India* 2, 41 (1937).

Blackstrap molasses as raw material for biochemical industries. VIII, Compressed yeast. W. L. Owen. Facts about Sugar 32, 263-5 (1937).

Molasses; feed value and buffering. H. Claassen. Centr. Zuckerind. 45, 179-80 (1937); Chem. Abstr. 31, 3730 (1937).

Purification of molasses in the manufacture of yeast. S. E. Kharin and A. S. Dement'ev. Colloid J., Voronezh, 4, 711-16 (1938).

Growth-promoting substances in beer molasses. R. Illies. Z. Spiritusind. 61, 259-60, 267-8 (1938).

Organization of the yeast and of the fermenting departments in distilleries utilizing molasses. G. Miroshnichenko and E. Vasil'ev. Spirto-Vodochnaya Prom. 15, No. 4, 4-8 (1938); Chem. Abstr. 33, 891 (1939).

Blackstrap molasses as raw material for biochemical industries. X. The promotion of biochemical fermentations. W. L. Owen. Facts about Sugar 33, 50-4 (1938).

[Report of] molasses laboratory. A. R. Lamb. Proc. Hawaiian Sugar Planters' Assoc., Rept. Expt. Sta., 58, 116-17 (1939).

Continuous propagation of compressed yeast in molasses solution without impairing the crop and fermenting power. R. Illies. Z. Spiritusind. 61, 107-8 (1938).

Sugar cane juice as a nutrient medium for yeast. K. Yamafuji, K. Otsu and Y. Iwata. Biochem. Z. 296, 289-93 (1938).

Cane juice as a yeast culture medium. K. Ohtsu. Rept. Sugar Expt. Sta., Tainan, No. 5, 168-82 (1938).

Blackstrap molasses as raw material for the biochemical industries. XII. The utilization of distillery slop. W. L. Owen. Facts about Sugar 33, No. 6, 45-8 (1938).

The new activated Fleischmann's yeast and its application to the industry of high-grade molasses. F. Guerrero. Proc. assoc. tec. azucar. Cuba 13, 311-19 (1939); Chem. Abstr. 34, 8322 (1940).

Build-up of yeast at the sugar factory for making invert molasses. A. P. Fowler. Proc. assoc. tec. azucar. Cuba 13, 227-30 (1939); Chem. Abstr. 34, 8321 (1940).

Influence of colloids on the growth of yeast. A. S. Nechaeva. Colloid J., Voronezh 6, 47-50 (1940).

Yeast and the manufacture of invert molasses. W. L. Owen. Facts about Sugar. 35, No. 6, 37-8 (1940).

Practical significance of growth factors in molasses and in production of bakers' yeast. F. Wendel. Z. Spiritusind. 63, 269-70(1940).

Nutrients for yeast in beer-sugar molasses. H. Claassen. Deut. Zuckerind. 66, 505 (1941).

Preliminary observations on cultivation of yeasts. J. P. Shukla. Proc. Sugar Tech. Assoc. India 8, I, 345-50 (1941); Chem. Abstr. 35, 5248 (1941).

Molasses elaboration. G. T. Reich. Trans. Am. Inst. Chem. Engrs. 38, 1049-66 (1942).

Report of molasses laboratory. R. D. Vroman. Proc. Hawaiian Sugar Planters' Assoc., Rept. Expt. Sta., 62, 91-4 (1943).

Effect on carbohydrate metabolism

Glucokinase, a new hormone present in plant tissue. Preliminary paper. J. B. Collip. J. Biol. Chem. 56, 513-43 (1923).

Some problems of diabetes mellitus. L. B. Winter and W. Smith. Brit. Med. J. 1923, I, 711-5.

Use of yeast extracts in diabetes. L. B. Winter and W. Smith. Nature 112, 205 (1923).

The lowering of the blood sugar by an extract of yeast. L. B. Winter and W. Smith. J. Physiol. 57, xl (1923).

Studies on carbohydrate metabolism. II. The preparation of an anti-diabetic hormone from yeast. H. B. Hutchinson, W. Smith and L. B. Winter. Biochem. J. 17, 683-692 (1923).

Insulin-like substances. I. T. Brugsch and H. Horsters. Biochem. Z. 147, 150-62 (1924).

The hypoglucemic effect of live saccharomycetes and of juices and extracts of beer yeast. F. Alzona and G. B. Orlandi. Rif. medica 41, 529-32 (1925).

Insulin-like substances in higher plants and microorganisms P. E. Simola. Ann. acad. sci. Fennicae, A29, 23 pp. (1927).

The action of extracts of beer yeasts on the combined sugar of the blood. M. Bufano. Arch. farmacol. sper. 44, 22-32 (1927).

"Free sugar" of the blood plasma. E. J. Bigwood and A. Wuillot. Bull. soc. chim. biol. 9, 867-82 (1927).

Experimental studies on the behavior of the blood sugar level following the ingestion of yeast. A. Bickel and G. Nigmann. Biochem. Z. 203, 421-8 (1928).

Hypoglycemia-producing material from plants and microorganisms. Y. Shikunami. Tôhoku J. Exptl. Med. 10, 560-79 (1928).

Action of different races of beer yeast on the blood sugars. E. J. Bigwood and A. Wuillot. Compt. rend. soc. biol. 99, 347-9 (1928).

Insulin substitutes. VIII. Antidiabetic substances in yeast and yeast nucleic acids. E. Kaufmann. Z. ges. exptl. Med. 62, 739-44 (1928).

An insulin-like substance from yeast. U. v. Euler. Biochem. Z. 194, 197-203 (1928).

Brewers' yeast and incomplete alimentation. Blood sugar, glycogen in liver and muscles, inorganic phosphorus and lactacidogen in the breast muscle of pigeons kept on a avitaminic diet completed with brewers' yeast. F. Negri. Biochim. terap. sper. 16, 510-9 (1929).

Experimental studies on the behavior of liver glycogen following the feeding of yeast. A. Bickel and A. Nigmann. Biochem. Z. 210, 443-7 (1929).

The activation of insulin by yeast press juice. E. Glaser and G. Halpern. Biochem. Z. 207, 377-83 (1929).

Stimulation of resorption by yeast extract. III. E.v. Kokas and G. Gal. Biochem. Z. 205, 380-7 (1929).

The non-identity of the insulin-like substance in yeast with true insulin. A. Boivin. Bull. soc. chim. biol. 12, 244-52 (1930).

The effect of yeast concentrate products on the carbohydrate metabolism after parenteral and oral administration. A. Bickel and I. A. Collazo. Biochem. Z. 221, 295-303 (1930).

Experimental studies on the hypoglycemic action of beer yeast administered enterically. A. Cesta. Boll. soc. ital. biol. sper. 5, 878-81 (1930).

Experimental studies on the influence of the enteral administration of yeast biocatalyzers on the chemical processes in muscle and liver during training. J. A. Collazo, G. Liss and C. Pi-Sunyer Bayo. *Biochem. Z.* 227, 326-33 (1930).

New studies on the influence of yeast on the liver and muscles of trained dogs. H. Aida. *Biochem. Z.* 237, 347-57 (1931).

Vitamin and the metabolism of carbohydrates. H. Bierry and F. Rathery. *Compt. rend. soc. biol.* 113, 545-6 (1933).

The hypoglucemic action of yeast extracts, especially the relation of yeast extracts to true hormones. I. The influence of yeast extracts on the normal and adrenaline blood-sugar balance. K. Malhara. *Folia Endocrinol. Japon.* 9, 34-5 (1933); *Chem. Abstr.* 28, 6483-4 (1934).

Hypoglucemic power of an aqueous extract of beer yeast. L. Binet, R. Fabre, and D. Bargeton. *Compt. rend. soc. biol.* 113, 235-6 (1933).

The common appearance of skin infections caused by yeast and yeast-like fungi in diabetics. W. Engelhardt and W. Haupt. *Klin. Wochschr* 12, 1805-6 (1933).

Quantitative change of glycogen in the liver in vitamin B₁ deficiency. T. Ariyama. *J. Agr. Chem. Soc. Japan* 9, 1394-403 (1933).

Experimental investigations on the changes of the blood-sugar content of rabbits fed with beer yeast. A. Costa. *Pathologica* 26, 278-85 (1934).

The influence of yeast on carbohydrate metabolism. V. Barone. *Clin. med. ital.* 66, No. 6 (1935).

Effect of yeast on the liver glycogen of white rats during hyperthyroidism. V. A. Drill. *J. Nutrition* 14, 355-63 (1937).

Insulin-like substance in autolyzed yeast. L. The curve of sugar depression. Y. Shizume. *J. Agr. Chem. Soc. Japan* 13, 262-6 (1937).

Treatment of diabetes mellitus with yeast. W. Beckert. *Munch. med. Wochschr.* 85, 1231-2 (1938).

Action of yeast extracts on the carbohydrate metabolism. J. Ledrut. *Ann. physiol. physicochim. biol.* 15, 865-8 (1939).

Metabolism of glucides. I. Action of yeast extract. II. Action of nicotinic acid. J. Ledrut. *Bull. soc. chim. biol.* 22, 321-8 (1940).

Effects of various vitamin supplements and of whole yeast on the digestion and absorption of the carbohydrate of a complete diet. R. A. Russell and E. S. Nasset. *J. Nutrition* 22, 287-94 (1941).

Catalase

The augmentation of the catalase activity of yeasts. H. v. Euler and I. Laurin. Z. physiol. Chem. 106, 312-7 (1919).

Catalase action in yeast cells. H. v. Euler and R. Blix. Medd. Vetenskapsakad. Nobelinst. 5, No. 23, 1-26 (1919).

Increased catalase action in yeast cells. H. v. Euler and R. Blix. Z. physiol. Chem. 105, 83-114 (1919).

The stability of yeast catalase. K. Nakamura. Z. physiol. Chem. 139, 140-6 (1924).

Manometric determination of catalase. A. Fujita and T. Kodama. Biochem. Z. 232, 20-34 (1931).

Yeast catalase. M. Matsuyama. J. Faculty Agr. Hokkaido Imp. Univ. 32, 109-99 (1933).

Further studies on the activation of catalase in living cells. K. Yamafuji. Biochem. Z. 288, 145-8 (1936).

Catalase activation in the living cell. K. Yamafuji. Enzymologia 1, 120-33 (1936); III. Biochem. Z. 290, 209-12 (1937); IV. Enzymologia 2, 99-104 (1937)(in German).

Activation of catalase in the yeast cell by chloroform or toluene. K. Yamahuzi, H. Imagawa and S. Suzuki. Biochem. Z. 304, 266-70 (1941).

Catalase of molds and yeasts. H. Matui. J. Agr. Chem. Soc. Japan 16, 1071-3 (1940).

The effect of chloroform or toluene on yeast catalase. K. Yamahuzi, Imagawa and T. Inouye. Biochem. Z. 307, 220-5 (1941).

Feeding of Cattle

Fresh boiled yeast an excellent food for cattle. J. Paechtner. Wochschr. Brau. 29, 225-7 (1912).

The value of dry yeast, potato vinasse, malt sprouts and palm seed cake under various conditions as feedstuffs for milk production. Specific actions of said feedstuffs on the fat content of milk. W. Voltz, A. Baudrexel and W. Dietrich. Landw. Jahrb. 47, 573-638 (1914).

Yeast as supplementary feed for calves. E. H. Eckles, V. M. Williams, J. W. Wilbur, L. S. Palmer and H. M. Harshaw. J. Dairy Sci. 7, 421-39 (1924).

Dried brewers' yeast vs. linseed-oil meal as a protein supplement for dairy cows in milk. H. Barton, A. R. Ness and E. W. Craighton. Macdonald Coll., McGill Univ. Tech. Bull. 3, 30 pp. (1926).

Yeast as a feeding stuff. E. W. Lewis. Fertilizer Feeding stuffs Farm supplies J. 12, 767-9 (1927); Chem. Abstr. 22, 830 (1928).

Methods of increasing the vitamin D potency of dairy products. W. E. Krauss and R. M. Bethke. Bimonthly Bull. Ohio Agr. Expt. Sta. 20, 52-60 (1935).

Dry yeast as a dairy feed for increasing milk yield. T. Baumgärtel. Milchwirtschaft. Zentr. 65, 297-302 (1936).

Dry yeast as a feed for increasing the efficiency of dairy cattle. T. Baumgärtel. Milchwirtschaft. Zentr. 65, 345-55 (1936).

Wood sugar yeast as a protein foodstuff for dairy cattle. H. Büniger. Milchwirtsch. Weltkongr. (Berlin 1937) 11, Bd. 1, 106-7 (1937); Chem. Abstr. 32, 8029 (1938).

The utilization of nutritive substances in fermented concentrates by young cattle. P. D. Pshenichnyi. Problems Animal Husbandry, Moscow, 7, No. 3, 164-8 (1938).

The use of yeast in calf meals and pellets. P. F. Newman and E. S. Savage. J. Dairy Sci. 21, 161-7 (1938).

The utilization of protein by growing cattle. S. Timariu. Landw. Vers.-Sta. 129, 124-50 (1938).

Concentrate feed in dairy rations. L. A. Henke, S. H. Work and C. I. Maruyama. Rept. Hawaii Agr. Expt. Sta. 1940, 23-6 (1941).

The utilization of yeast. II. Judging the "Metz" method and its modification for preservation of yeast. H. Fink, F. Just, M. Glaubitz, and W. Kleber. Wochschr. Brau. 58, 123-7, 131-7 (1941).

The effect of feeding bakers' yeast on the fat content of milk. (Preliminary report). H. Büniger, H. Schmidt and A. Naegelsbach. Biedermanns Zentr., Abt. B., 14, 436-41 (1942).

Carbohydrates

The carbohydrate of yeast. W. Meigen and A. Spreng. Z. physiol. Chem. 55, 48-73 (1908).

Action of some enzymes on the carbohydrates of yeast. J. Gaja. Compt. rend. soc. biol. 77, 2-4 (1914).

Maltose. II. Estimation of maltose in yeast. R. Willstätter and W. Steibelt. Z. physiol. Chem. 111, 157-79 (1920).

A sulfur-containing sugar obtained by hydrolysis from the adenylthiosugar of yeast. U. Suzuki and T. Mori. Biochem. Z. 162, 413-2 (1925).

Thiosugar from yeast. P. A. Levene and H. Sobotka. J. Biol. Chem. 65, 551-4 (1925).

The liquefaction of starch by the enzyme in yeast autolyzate. S. Nishimura. Bull. Agr. Chem. Soc. Japan 4, 126 (1928).

The chromolytic study of yeast. IV. The kinds of sugar in yeast. K. Watanabe. Japan. J. Dermatol. Urol. 28, 5 pp. (1928); Chem. Abstr. 24, 5336 (1930).

The starch-liquefying enzyme in dry yeast autolyzates. Synthetic effects on enzymes. S. Nishimura. Biochem. Z. 223, 161-70 (1930).

Studies upon the enzymic degradation of carbohydrates. R. Nilsson. Arkiv Kemi Mineral. Geol. 10A, No. 7, 1-135 (1930).

Nature of the yeast polysaccharide. M. G. Sevag, C. Cattaneo and L. Maiweg. Ann. 519, 111-24 (1935).

The synthesis of reserve carbohydrate by yeast. I. Synthesis from glucose and maltose and the influence thereon. R. A. McAnally and I. Smedley-MacLean. Biochem. J. 29, 1872-6 (1935).

Present state of knowledge of the carbohydrates of yeast. K. Silberstein. Wochschr. Brau. 53, 317-21, 330-1 (1936).

Chemical and immunologic investigations on the nature of yeast polysaccharide. F. Klopstock and A. Vercellone. Z. Immunitätsforschung 88, 446-59 (1936).

Styryl 430 and the metabolism of glucose in yeast. Effects of pH and the phosphate ion. Y. Pourbaix. Compt. rend. soc. biol. 126, 448-50 (1937).

Polysaccharides XXIV. Yeast mannan. W. N. Haworth, E. L. Hirst and F. A. Isherwood. J. Chem. Soc. 1937, 784-91 (1937).

The polysaccharide synthesis in the yeast cell. K. F. Bonhoeffer and G. Gunther. Naturwissenschaften 25, 459 (1937).

Carbohydrates of the yeast cell. Determination of "self-fermented" carbohydrates. H. Fink, K. Silberstein and J. Hoepfner. Wochschr. Brau. 57, 105-10, 113-15, 119-23 (1940).

Molecular constitution of an insoluble polysaccharide from yeast *Saccharomyces cerevisiae*. W. Z. Hassid, M. A. Joslyn and R. M. McCready. J. Am. Chem. Soc. 63, 295-8 (1941).

Carbohydrate anabolism and catabolism of "starved" bakers' yeast cells. T. J. B. Stier and H. Sprince. J. Cellular Comp. Physiol. 18, 135-42 (1941).

Constitution of yeast mannan. W. N. Haworth, R. L. Heath and S. Peat. J. Chem. Soc. 1941, 833-42 (1941).

The thiosugar of yeast. G. Wendt. Z. physiol. Chem. 272, 152-4 (1942)

Carboxylase

Sugar-free fermentation. IV. Carboxylase, a new enzyme of yeast. C. Neuberg and L. Karczag. Biochem. Z. 36, 68-75 (1911).

Sugar-free yeast fermentation. XI. Carboxylase. C. Neuberg and P. Rosenthal. Biochem. Z. 51, 128-42 (1913).

The enzyme of washed zymine and dried yeast (Lebedev). I. Carboxylase. A. Harden. Biochem. J. 7, 214-7 (1913).

Carboxylase in the juice of top yeast. C. Neuberg and L. Czapski. Biochem. Z. 67, 9-11 (1914).

Action of ether on the yeast cell. I. Carboxylase. N. G. Kerr and W. J. Young. Austral. J. Exptl. Biol. Med. Sci. 3, 187-8 (1926).

Kinetics of carboxylase action and its significance in controlling the biological decomposition of carbohydrates. K. Wetzell. Planta, 15, 697-738 (1932).

Coccarboxylase. II. E. Auhagen. Z. physiol. Chem. 209, 20-6 (1932).

Coccarboxylase, a new coenzyme of alcoholic fermentation. E. Auhagen. Z. physiol. Chem. 204, 149-67 (1932).

Carboxylase. F. Axmacher and H. Bergstermann. Biochem. Z. 272, 259-68 (1934).

Purification of carboxylase. O. v. Schoenebeck. Biochem. Z. 272, 42-50 (1934).

Stabilization of carboxylase solutions. Further studies on carboxylase. O. v. Schoenebeck and C. Neuberg. Biochem. Z. 275, 330-8 (1935).

Swedish top yeast: carboxylase. K. Wulfert. Tids. Kjem. Bergv. 177-9, 82-6 (1936); Chem. Abstr. 31, 4347 (1937).

Extraction of phosphatase and carboxylase of yeast. C. Kobayashi. J. Biochem., Tokyo, 24, 369-87 (1936).

Note upon the preparation of crude cocarboxylase from vitamin B₁ by yeast. H. W. Kinnorsley and R. A. Peters. Biochem. J. 32, 697-8 (1938).

The isolation and properties of carboxylase. D. E. Green, D. Herbert and V. Subrahmanyam. J. Biol. Chem. 135, 795-6 (1940).

The effect of various substances on the activity of purified yeast carboxylase. F. A. Cajori. J. Biol. Chem. 143, 357-6 (1942).

The inhibition of yeast carboxylase by split products of NN¹ dimethylaminoazobenzene. C. J. Kensler, M. F. Young and C. P. Rhoads. J. Biol. Chem. 143, 465-72 (1942).

Effects of Miscellaneous Chemicals

Influence of twelve acids, alcohol, formaldehyde, and soda lye upon infected distillery and press yeast. W. Henneberg. Z. Spiritusind. 29, 442, 451, 461, 472, 483, 491 (1906).

On the effect of acids, alkalies, and neutral salts on the fermentative activity and on the rate of multiplication of yeast cells. E. Drabale and D.G. Scott. Biochem. J. 2, 339-49 (1907).

The action of various vapors upon pressed yeast. R. O. Herzog and F. Horth. Z. physiol. Chem. 52, 432-34 (1907).

The destructive action of ethyl alcohol on bacteria and yeasts. E. C. Hansen. Centr. Bakt. Parasitenk., Abt. I, Orig., 45, 466-80 (1908).

Yeast poisons in grains, worts and yeasts and the dependence of their action on mineral salts. F. Hayduck. Z. angew. Chem. 21, 1978-82 (1908).

The influence of sodium selenite on the production of carbonic acid by living and dead yeasts. M. Korsakov. Ber. deut. bot. Ges. 28, 334-8 (1910).

The action of adrenaline on the monocellular organism. O. Schwarz. Wien. klin. Wochschr. 24, 267-8 (1911).

The influence of cesium, rubidium and lithium salts on yeast in comparison with the action of potassium and ammonium. Th. Bokorny. Allg. Brauer-Hopfen-Ztg. 52, 1469-70 (1912); Chem. Abstr. 7, 3139 (1913).

Action of salts of metals upon yeast and other fungi. Th. Bokorny. Centr. Bakt. Parasitenk., Abt. II, 35, 118-97 (1912).

The action of eosin upon bacteria, yeasts and molds. H. Zeiss. Arch. Hyg. 79, 141-67 (1913).

What influence has an increase in the quantity of yeast on the disinfecting power of various antiseptics? P. Lindner and O. Grouven. Wochschr. Brau. 30, 133-5 (1913).

Action of free ammonia on yeast. Comparison with other bases. Th. Bokorny. Z. Spiritusind. 36, 117 (1913).

Mechanism of the acclimation of yeasts to formaldehyde. M. E. Pozzi-Escot. Compt. rend. 156, 1851-2 (1913).

The activation of yeast. H. Euler and J. Sahlen. Z. Gärungsphysiol. 3, 225-34 (1913).

Resistance of yeasts cultivated at different temperatures toward various antiseptics, and influence of temperature at which the antiseptic is allowed to act. P. Lindner and O. Schmidt. Wochschr. Brau. 30, 249-51, 261-3, 265-8 (1913).

Influence of ozone on yeast and bacteria. Carl A. Nowak. J. Ind. Eng. Chem. 5, 668 (1913).

Influence of esters on yeasts and other budding fungi. H. Will. Centr. Bakt. Parasitenk., Abt. II, 38, 539-76 (1913).

Influence of organic acids on yeast. T. Buromskii. Centr. Bakt. Parasitenk., Abt. II, 42, 530-57 (1915).

Influence of organic acids on yeasts. H. Zikes. Allg. Z. Bierbrau-Malzfabr. 43, 1-4 (1915); Chem. Abstr. 9, 842 (1915).

Action of arsenic compounds on yeast. F. Boas. Z. ges. Brauw. (n.s.) 40, 199 (1917).

Influence of dicyanodiamide on the growth of various microorganisms. L. Moller. Biochem. Z. 88, 85-96 (1918).

Action of ozone on artificial culture media and on various bacteria, yeasts, and molds. R. Heise. Arb. kais. Gesundheitsamt 50, 418 (1919).

The sensitiveness of living yeast to hydrogen and hydroxylion concentration. H. v. Euler and F. Emberg. Z. Biol. 69, 349-64 (1919).

Action of toluene on dried yeast. J. Ginja and M. Djermanovitch. Compt. rend. soc. biol. 83, 1388-9 (1920).

Action of chloropicrin on yeast and on flower of wine. G. Bertrand and Mme. Rosenblatt. Compt. rend. 170, 1350-2 (1920).

Toxicity and chemical potential. W. L. Miller. J. Phys. Chem. 24, 562-9 (1920).

The action of surface-active acid and some surface-active higher homologs of the alcohol series (amyl alcohol and octyl alcohol) on the yeast cell and fermentation. W. Windisch, W. Henneberg and W. Dietrich. Biochem. Z. 107, 172-9 (1920).

The action of acids on yeast fermentation. R. Somogyi. Biochem. Z. 120, 100-2 (1921).

Methylene-blue as indicator in determining the toxicity of phenol and phenol-salt solutions towards yeast. C. G. Fraser. J. Phys. Chem. 25, 1-9 (1921).

The effect of alcohol on the toxicity of phenol towards yeast. E. I. Fulmer. J. Phys. Chem. 25, 10-8 (1921).

The acclimatization of yeast to ammonium fluoride and its reversion in wort. E. I. Fulmer. J. Phys. Chem. 25, 455-472 (1921).

The participation of the lipoids in the material exchange of plant cells. F. Boas. Biochem. Z. 117, 166-214 (1921).

Action of saponins on yeast cells. F. Boas. Ber. deut. bot. Ges. 40, 32-8 (1922).

The action of sublimate, phenol and quinine on yeast. G. Joachimoglu. Biochem. Z. 130, 239-48 (1922).

Influence of highly dilute organic acids on the spore-formation of yeasts. H. Loeffler. Allg. Z. Bierbrau.-Malzfabr. 50, 127-31 (1922); Chem. Abstr. 17, 3400 (1923).

The survival of yeast treated with toluene. I. N. Asheshov and J. Giaja. *Compt. rend. soc. biol.* 88, 122-3 (1923).

Influence of the union of acids on the multiplication of yeast. P. von Buynder. *Bull. assoc. élèves inst. sup. ferment. Gand.* 24, 309-19 (1923); *Chem. Abstr.* 18, 3404 (1924).

Experiments on yeast and disinfection of seeds. Th. Bokorny. *Allg. Brauer-Hopfenztg.* 62, 1239-42 (1922); 63, 105-8 (1923); *Chem. Abstr.* 17, 3564 (1923).

Effect of certain stimulants on the fermentative activity of yeast. M. J. Otero. *Compt. rend. soc. biol.* 88, 375-6 (1923).

Toxicity of acids towards yeast. E. M. Taylor. *Trans. Roy. Soc. Can.* (3) 18, III, 115 (1924).

The influence of certain chemicals on the rate of reproduction of yeast in wort. N. A. Clark. *J. Phys. Chem.* 28, 221-31 (1924).

Cyanamide activity. IV. J. Dittrich. *Z. ges. exptl. Med.* 43, 270-8 (1924).

Action of nitrous acid upon the antineuritic substance in yeast. R. A. Peters. *Biochem. J.* 18, 858-65 (1924).

The action of hydrogen sulfide upon chemical processes in cells. E. Negelein. *Biochem. Z.* 165, 203-13 (1925).

Alteration of the glucolytic activity of living yeast cells. I. W. Schoeller and M. Gehrke. *Biochem. Z.* 172, 358-72 (1926).

The action of mineral waters. The physical chemistry and physiology of complicated salt solutions. L. Fresenius and K. Harpuder. *Klin. Wochschr.* 5, 230, 4-6 (1926).

Mechanism of the action of chloroform on living material. G. A. Nadson and M. N. Meisl. *Compt. rend.* 183, 82-3 (1926).

The effect of hydrogen peroxide on yeast growth and fermentation. J. B. Brown and H. L. Wikoff. *Ann. Appl. Biol.* 14, 428-35 (1927).

Biochemistry of complex salt solutions. I. The biological effects of the Wiesbaden hot spring water. K. Harpuder. *Biochem. Z.* 183, 45-57 (1927).

The necessity of carbon dioxide for the growth of bacteria, yeasts and molds. G. E. Rockwell and J. H. Highberger. *J. Infectious Diseases* 40, 438 (1927).

Investigation of the action of quinine derivatives on the fermenting power of live yeast. P. Rona and H. W. Nicolai. *Biochem. Z.* 189, 331-47 (1927).

Influence of mercuric chloride on the osmotic value of the yeast cell. G. Seliber and (Mlle.) Katznelson. *Compt. rend. soc. biol.* 97, 515-6 (1927).

The effect of hexylresorcinol on yeast growth and fermentation. J. B. Brown and H. L. Wikoff. *Ann. Appl. Biol.* 14, 436-9 (1927).

Buffer action as a biological principle. V. Bermann. *Wochschr. Brau.* 45, 21-4 (1928); *Z. angew. Chem.* 41, 153-7 (1928).

Action of several disinfectants on yeast. F. W. Tanner and G. D. Bollas. *Proc. Soc. Exptl. Biol. Med.* 26, 154-6 (1928).

The effect of arsenious acid on respiration and fermentation. II. K. Dresel. *Biochem. Z.* 192, 351-7 (1928).

The influence of carbohydrates and of hydrogen-ion concentration on the sporulation of Saccharomycetes. F. Wagner. *Contr. Bakt. Parasitenk., Abt. II*, 75, 4-24 (1928).

Growth and enzymic activity of Saccharomyces cerevisiae in presence of sodium and potassium cations. I. Novi. *Rend. accad. sci. Bologna (n.s.)* 34, fis. 74-5 (1929-30).

The behavior of yeasts and several varieties of Hyphomycetes with quinic acid. V. V. Pervozvanskii. *Zentr. Bakt. Parasitenk., Abt. II*, 81, 372-92 (1930).

Action of bile salts on some fermenting organisms. F. Boas and G. Neumuller. *Arch. Mikrobiol.* 1, 35-59 (1930).

Disinfection. II. The manner of death of certain bacteria and yeasts when subjected to mild chemical and physical agents. G. Knaysi and M. Gordon. *J. Infectious Diseases* 47, 303-17 (1930).

Studies on the colloid chemistry of antiseptics and chemotherapy. IV. The duplication in vitro of the "interference phenomenon" in combination chemotherapy. H. N. Wright and L. D. Hirschfelder. *J. Pharmacol.* 39, 39-57 (1930).

The influence of sodium monoiodoacetate on the enzymes of zymase and the fermentation of hexosediphosphate. I. Yanasaki. *Biochem. Z.* 228, 123-6 (1930).

The influence of imine-forming substances on sugar decomposition by yeast. Studies on the cozymase action. I. F. Zuckerkandl and L. Messinger-Klebermaas. *Biochem. Z.* 239, 172-81 (1931).

The influence of quinone on cells. G. Lejhanec, I. A. Parfentjev and B. Sokoloff. *J. Pharmacol.* 42, 343-53 (1931).

Culture of yeasts in concentrated solutions of organic acids. H. Kufferath. *Ann. zymol.*, (2) 1, 9-29 (1931).

Chemical compounds lethal to yeasts and bacteria. W. Newton and H. T. Edwards. *Sci. Agr.* 12, 564-7 (1932).

Further studies on the influence of haloacetic acid on the cleavage and oxidation metabolism. E. Lundsgaard. *Biochem. Z.* 250, 61-88 (1932).

The effect of some alkaloids on saccharomycetes from molasses. G. Mezzadrolì and A. Amati. *Ind. saccar. ital.* 25, 392-4 (1932); *Chem. Abstr.* 27, 623 (1933).

Report of the imperial agricultural bacteriologist. N. V. Joshi. *Sci. Repts. Imp. Inst. Agr. Res. Pusa*, 1930-31, 61-72 (1932).

The prolonged action of potassium chloride causing a displacement of the thermic optimum of yeast. E. Bachrach and J. Roche. *Compt. rend.* 194, 1023-4 (1932).

The mechanism of the effect of toluene on fermentation by yeast. W. A. Belitzer. *Biochem. Z.* 265, 5-12 (1933).

The accumulation of ionizable benzene derivatives in yeast cells with special reference to the spontaneous reversal in the case of o-hydroxybenzoic acid. F. Axmacher. *Arch. exptl. Path. Pharmacol.* 173, 722-36 (1933).

The action of cyanide salts on the development of yeasts. M. N. Meissel. *Zentr. Bakt. Parasitenk., Abt. II*, 88, 449-59 (1933).

The effect of amines on yeast poisoned by iodo-acetic acid. E. F. Schroeder, G. E. Woodward and M. E. Platt. *J. Biol. Chem.* 100, 525-35 (1933).

Action of cobra venom on Saccharomyces cerevisiae. C. Taguet, E. Rousseau and R. Dumatras. *Compt. rend. soc. biol.* 113, 9-11 (1933).

The prolonged action of potassium chloride involving a displacement of the optimum temperature of yeast. E. Bachrach and J. Roche. *J. physiol. path. gén.* 31, 1049-55 (1933).

Role of ferrous and ferric ions in the fermentation and oxidation processes of yeasts. A. Malkov. Zentr. Bakt. Parasitenk., Abt. II, 91, 161-3 (1934).

The fungicidal power of phenol derivatives. I. Effect of introducing alkyl groups and halogens. G. J. Woodward. J. Lab. Clin. Med. 19, 1216-23 (1934).

Some reactions with heavy water. A. H. Hughes, J. Yudkin, I. Komp and E. K. Rideal. J. Chem. Soc., 1934, 1105-12 (1934).

The effect of deuterium on the growth of yeast. O. W. Richards. J. Bact. 28, 289-94 (1934).

The incorporation of heavy hydrogen in growing organisms. O. Reitz and K. F. Bonhoeffer. Naturwissenschaften 22, 744 (1934).

Chemical, physicochemical and biological studies on the esters of p-hydroxybenzoic acid. M. A. Mancini and L. Basilisco. Boll. soc. ital. biol. sper. 9, 327-9 (1934).

Influence of antiseptics on yeast autolysis. H. Haehn and H. Leopold. Wochschr. Brau. 51, 353-6 (1934).

The synthesis of reserve carbohydrate by yeast. II. The effect of fluoride. R. A. McNally and I. Smedley-Maclean. Biochem. J. 29, 2236-41 (1935).

Action of dinitrocresol on yeast fermentation and oxidation. M. E. Krah1 and G. H. A. Clowes. J. Am. Chem. Soc. 57, 1144 (1935).

Recent investigations on the Elmcoid process. F. Stockhausen. Wochschr. Brau. 52, 177-82, 185-91 (1935).

Influence of saponin and other poisons on yeast. W. Schwartz and H. Kretzdorn. Biochem. Z. 280, 72-87 (1935).

Oligodynamic action of oxygen on the multiplication of yeast cells. W. Librecht and L. Massart. Compt. rend. soc. biol. 119, 1193-4 (1935).

Action of methyl and ethyl alcohols on soluble and fixed enzymes. I. Action on beer yeast and the lipase of the cytoplasm of Ricinus seeds. N. T. Deleano and M. D. Mezincosco. Bull. soc. chim. biol. 17, 1805-13 (1935).

The mechanism of the action of ethylene on cell processes. F. H. Shaw. Austral. J. Exptl. Med. Sci. 13, 95-102 (1935).

The influence of alkali cations on the fermentation capacity of yeast. A. Lasnitzki and E. Szorényi. Biochem. J. 29, 580-7 (1935).

Action of anesthetics (chloroform and ether) on brewers' yeast. N. Floresco. Bul. Fac. Stiinte Cernauti 9, 318-25 (1935); Chem. Abstr. 30, 7277 (1936).

Comparative effects of sodium arsenate, sodium arsenate and arsenic proteins on respiration and glucolysis of Saccharomyces cerevisiae. P. Mascherpa. Boll. soc. ital. biol. sper. 11, 253-5 (1936).

Conjugated action of folliculin and mineral catalysts on the development of yeast. G. Bertrand and A. P. Weber. Compt. rend. 202, 1629-32 (1936).

Yeast grown in cyanide. II. L. Bradley Pett. Biochem. J. 30, 1438-45 (1936).

The effect of arsenicals on the yeast cell. A. Janke and R. Garzuly-Janke. Arkh. Biol. Nauk 43, Nos. 2-3, 307-18 (1936)(in German).

The fixation of heavy hydrogen in growing organisms. IV. F. Salzer and K. F. Bonhoeffer. Z. phys. Chem., Abt. A, 176, 202-8 (1936).

The action of ethylurethan on the activity of Euler's Z factor. P. Mascherpa. Arch. sci. biol., Naples, 22, 227-34 (1936).

Action of organometallic complexes of ascorbic acid on fermentative power of beer yeast. F. Arloing, A. Morel, A. Jossierand, L. Thévenot and J. M. Perret. Compt. rend. soc. biol. 122, 557-9 (1936).

Effects of alkaloids on yeast. M. S. Filosofov. Bull. assoc. chim. 53, 787-91 (1936).

Influence of enzyme reactions in the cell and in solutions. I. Influence of dehydration processes in the cell by alkali ions. F. Fleischmann and L. Schwarz. Protoplasma 27, 552-5 (1937).

The fixation of heavy hydrogen in growing organisms. V. G. Gunther and K. F. Bonhoeffer. Z. phys. Chem., Abt. A, 180, 185-210 (1937).

Effect of alkaloids on fermentation and multiplication of yeast. C. Enders and F. M. Wieninger. Biochem. Z. 293, 22-9 (1937).

Inhibition of growth in yeast. H. Luers, C. Enders and K. Kärnbach. Biochem. Z. 296, 47-52 (1938).

The influence of ergot-containing raw materials on yeast. A. Kosyrskü. Spirito-Vodochnaya. Prom. 15, No. 1, 18 (1938); Chem. Abstr. 34, 4224 (1940).

Substances with a blue fluorescence. Flavin content of a yeast grown in the presence of cyanide. A. Gourévitch. Compt. rend. soc. biol. 127, 216-17 (1938).

Heavy hydrogen in biological cellular processes. K. Theis. Wochsch. Brau. 55, 36-9 (1938).

The effect of oxygen on the multiplication of yeast. L. Massart. Arch. intern. pharmacodynamie 60, 56-64 (1938).

Effect of 1, 2, 5, 6-dibenzanthracene on the growth and respiration of yeast. E. S. Cook, Sister M. J. Hart and R. A. Joly. Science (n.s.) 87, 331 (1938).

The influence of sodium chloride on the growth and metabolism of yeast. H. B. Speak, A. H. Gee and J. M. Luck. J. Bact. 15, 319-40 (1940).

The action of propionic acid on microbes and experimental animals. J. Kulman. Chem. Listy 33, 420-3 (1939); Chem. Abstr. 34, 5471 (1940).

Influence of acids and salt solutions on cold-stored yeast. G. Grams and C. Engelhard. Z. ges. Brauw. (n.s.) 62, 33-9, 41-52 (1939).

The effect of trace elements on the propagation of yeast in a synthetic nutrient solution. E. Kiene. Vorratspflege Lebensmittel-forsch. 3, 446-56 (1940).

The effect of calcium salts on the structure and activity of yeast. T. M. Kondrat'eva. Microbiologiya 9, 114-27 (127-8 in English)(1940).

Effect of humin-melanins (melanoids) on yeast growth. L. S. Nechaeva. Microbiologiya 9, 679-84 (684 in English)(1940).

The influence of carcinogenic substances on yeast multiplication. E. P. Tolmacheva. Méd. exptl., Kiev, 1940, No. 5-6, 54-6.

Some effects of carcinogenic substances on Saccharomyces ellipsoideus C. W. Dodge. Intern. Congr. Microbiol. Rept. Proc. (N.Y. 1939) 3, 493-4 (1940)(in French).

Studies on the alcohol tolerance of yeast. W. D. Gray. J. Bact. 42, 561-74 (1941).

The influence of "ice water" and distilled water on the activity of yeast. L. V. Falcev. Bull. biol. méd. exptl. U.R.S.S. 9, 246-8 (1940).

Neutralization of sulfonamide inhibition of yeast growth by p-aminobenzoic acid. M. Landy and D. M. Dickon. Nature 149, 244 (1942).

Storage of benzopyrene in the yeast cell. A. Graffi. Z. Krebsforsch. 52, 234-9 (1942).

Influences of traces of uranium on yeast cells. J. Hoffmann and R. Garzuly-Janko. Biochem. Z. 313, 372-6 (1943).

Quantitative investigations on the reaction of yeast to certain biologically active substances. A. Levan and C. G. Sandwall. Hereditas 29, 1164-78 (1943).

Effects of yeast extracts and phenylmercuric nitrate on yeast respiration and growth. E. S. Cook and C. W. Kreke. Proc. Soc. Exptl. Biol. Med. 53, 222-5 (1943).

Effect of CO₂ and CO₂ fixation in bakers' yeast. K. M. Brandt. Nature 153, 343-4 (1944).

Classification

Researches on fermentation organisms. I. Researches on certain species of Pichia, and remarks concerning specific descriptions of Saccharomyces in general. A. Kloecker. Compt. rend. trav. lab. Carlsberg 10, 207-26 (1913).

Classification of culture yeasts with the aid of the cytochrome spectrum. H. Fink. Z. physiol. Chem. 210, 197-219 (1932).

Differentiation and classification of culture yeasts with the spectroscopie. H. Fink, K. Weber and E. Berwald. Wochschr. Brau. 49, 313-18, 322-4 (1932).

Some notes on the classification of yeasts. M. Kluyver. Ann. zymol. (2) 1, 48-61 (1933).

Yeast and fermentation govern the quality and character of beer. R. Schwartz and S. Laufer. Am. Brewer 69, No. 7, 24-5; No. 8, 27-33; No. 9, 30-8; No. 10, 40-7; No. 11, 36-46 (1936).

Classification and differentiation of cultivated yeasts by the spectroscopic method. H. Fink, K. Weber and E. Berwald. Schweiz. Brau. Rundschau 1932, No. 11, (1932); Chem. Abstr. 27, 3286 (1933).

Botanical and systematic classification of spore-forming yeasts. A. Bossart. Schweiz. Brau. Rundschau 48, 81-5, 98-101 (1937); Chem. Abstr. 31, 8600 (1937).

How yeasts are identified. H. Kufferath. Ann. zymol. (3) 4, 1152-67 (1938).

The biochemical classification of yeast strains. A. S. Schultz, L. Atkin and C. N. Frey. J. Bact. 40, 339-46 (1940).

The yeasts, genetics, cytology, variation, classification and identification. A. T. Henrici. Bact. Rev. 5, 97-179 (1941).

Compressed

Progress in the manufacture of spirits and pressed yeast. H. Hand. Chem. Ztg. 30, 1067-71 (1906).

The carbon dioxide value of pure compressed yeast and compressed yeast and starch compounds. T. J. Bryan. U. S. Dept. Agr. Bur. C. Bull. 116, 25-8 (1908).

Advances in the fermentation industries (manufacture of spirits, pressed yeast and vinegar). P. Rinckleben. Chem. Ztg. 33, 777, 786 (1909).

The "percussion test" for the valuation of compressed yeast. W. Henneberg. Z. Spiritusind. 34, 86-7, 119, 131-2, 146-7, 159-60, 175, 181. (1911).

The compressed yeast industry under the new law for taxing spirits. W. Kiby. Chem. Ztg. 35, 2-3, 17-9 (1911).

Modern compressed yeast industry. W. Kiby. Chem. Ztg. 35, 421-3, 434-6 (1911).

Austrian compressed yeast. O. Broz. K. Kornauth and A. Schaefer. Arch. Chem. Mikrosk. 7, 1-22; Chem. Abstr. 8, 2448 (1914).

Manufacture of pressed yeast. A. C. Reavenall. J. Inst. Brewing 21, 97-110 (1915).

Liquefaction of yeast (cause and control). J. Rollo. Pharm. Zentr. 59, 173-6 (1918).

Compressed yeast as food for the growing organism. P. B. Hawk, H. R. Fishback and O. Bergeim. Am. J. Physiol. 48, 211-20 (1919).

Compressed yeast as a sugar by-product. H. Arnstein. Sugar 23, 72-3 (1921).

Phosphoric acid metabolism during the manufacture of pressed yeast. V. Bermann and E. Kulp. Wochschr. Brau. 42, 39-40 (1925).

Comparative effects of pressing and draining yeast. D. H. F. Fuller and F. E. B. Moritz. J. Inst. Brewing 32, 171-6 (1926).

Pressed yeast, frozen yeast and yeast stored under water. F. Windisch. Wochschr. Brau. 46, 349-55 (1929).

Maturity of compressed yeast. M. Glaubitz and G. Staiger. Brennerei Ztg. 49, 22 (1932); Chem. Abstr. 26, 5170-1 (1932).

Vitality of the plasma of compressed yeast. V. Jonáš. Chem. Obzor 7, 155 (1932); Chem. Abstr. 27, 1983 (1933).

Resistance of compressed yeast toward sulfuric acid. F. Wagner. Brennerei Ztg. 50, 111 (1933); Chem. Abstr. 28, 1463 (1934).

Changes in pressed yeast during storage. W. Iwanowski and K. Brzezinski. Przemysl Chem. 18, 93-101 (1934); Chem. Abstr. 28, 7418 (1934).

Is the grittiness of yeast a property of the type? F. Wendel Brennerei Ztg. 51, 69-70 (1934); Chem. Abstr. 28, 5922 (1934).

Grittiness of compressed yeast is a characteristic property of the type. F. Wagner. Brennerei Ztg. 51, 62-3 (1934); Chem. Abstr. 28, 5922 (1934).

Effect of storage temperatures upon the viability and baking properties of compressed yeast. L. H. Bailey, M. T. Bartram and S. C. Rows. Cereal Chem. 17, 55-66 (1940).

Physiological chemistry and cytology of compressed yeast. A summary and report of new investigations in ultraviolet light and on stained material. K. M. Brandt. Protoplasma 36, 77-119 (1941).

Composition, General

The poison elaborated by yeast. A. Fernbach. Compt. rend. 149, 437-9 (1909).

Yeast poison in yeasts. F. Hayduck. Wochschr. Brau. 26, 177-9, 189-90 (1909).

Existence of a specific methyl glucase in beer yeast. M. Bresson. Compt. rend. 151, 485-7 (1910).

The chemical composition of yeasts with relation to their behavior in fermentation. F. Schonfeld. Wochschr. Brau. 29, 393-6 (1912).

Chemistry of yeast. I. Nature of the cell membrane. II. Investigations of cell protein. G. Dreyer. Z. ges. Brauw. (n.s.). 36, 201-6 (1913).

The mineral constituents of yeast and their significance for its vitality. F. Schönfeld and G. Schönfelder. Wochschr. Brau. 31, 245-7 (1914).

Change in the alcohol and aldehyde content of yeast upon standing and during autolysis. C. Neuberg and E. Schwenk. Biochem. Z. 71, 126-32 (1915).

Nature and significance of volutin in yeast cells. M. A. van Herwerden. Proc. Acad. Sci. Amsterdam 20, 70-87 (1917).

Lactase content and fermentative power of lactose-fermenting yeasts. R. Willstatter and G. Oppenheimer. Z. physiol. Chem. 118, 168-88 (1922).

Moisture content of yeast cell. N. C. Beetlestone. J. Inst. Brewing 30, 987-92 (1924).

Phospholipin in yeast. W. C. Austin. J. Biol. Chem. 59, lii (1924).

Adenosin hexoside from yeast. P. A. Levene. J. Biol. Chem. 59, 465-72 (1924).

A new sulfur-containing constituent of yeast. U. Suzuki, S. Odake and T. Mori. Biochem. Z. 154, 278-89 (1924).

The presence of argon in living cells. A. Pictet, W. Scherrer and L. Helfer. Helv. Chim. Acta. 8, 537-45 (1925).

Presence of argon in living cells. A. Pictet, W. Scherrer and L. Helfer. Compt. rend. 181, 236-8 (1925).

Chromolytic study of yeasts. I. The chemical composition of yeasts. K. Watanabe. Japan J. Dermatol. Urol. 27, 373-85 (1927); Chem. Abstr. 22, 2765 (1928).

The occurrence of phytase in some yeasts and Aspergillus oryzae. C. Shimoda. Centr. Bakt. Parasitenk., Abt. II, 71, 232-47 (1927).

Zinc and normal nutrition. R. B. Hubbell and L. B. Mendel. J. Biol. Chem. 75, 567-86 (1927).

Liberation from yeast of substances giving the nitroprusside reaction. Y. Pourbaix and E. L. Kenneway. Biochem. J. 22, 1112-27 (1928).

The water content of yeast cells. F. E. Day. Brewers J., London, 64, 99-100 (1928).

Hydrostatic pressure and the yeast cell. N. C. Beetlestone. Brewers J., London, 64, 139 (1928).

The ectoplasm of yeast cells. The chemical constitution of the cell membranes and of substance. J. Schumacher. Bentr. Bakt. Parasitenk., Abt. I, Orig., 108, 193-207 (1928).

The zinc content of food vegetables. G. Bertrand and B. Bonzon. Compt. rend. 187, 1098-1101; Compt. rend. acad. agr. France 14, 1303-7 (1928).

Female hormone in yeast. E. Glimm and F. Wadehn. Biochem. Z. 197, 442-4 (1928).

Interstitial liquid and (yeast) cell moisture. N. C. Beetlestone. J. Inst. Brewing 35, 260-3 (1929).

The chromolytic study of yeast. V. The inorganic constituents of yeast. K. Watanabe. Japan J. Dermatol. Urol. 28, 2 pp.; Chem. Abstr. 24, 5336 (1930).

Report of the Research Laboratory for the Yeast Industry in the Fermentation Institute. G. Staiger and M. Glaubitz. Brennerci Ztg. 45, 220, 223; 46, 95, 202 (1930); Chem. Abstr. 24, 2541-2 (1930).

Hydrogen ion concentration of the interior of the cell of Fusarium lini B. and of yeast. VII. Mechanism of enzyme action. S. Mahdihasson. Biochem. Z. 226, 203-8 (1930).

Phosphatide (lecithin) content of compressed yeast. Drews Brennerci Ztg. 47, 210 (1930); Chem. Abstr. 25, 2805 (1931).

An easily cleavable phosphoric acid compound in yeast. H. v. Euler and R. Nilsson. Z. physiol. Chem. 195, 273-6 (1931).

Depressor substances of yeast. U. S. v. Euler. Arch. exptl. Path. Pharmacol. 167, 171-6 (1932).

The droplets of sulfur in yeast cells. G. A. Nadson and N. A. Krasilnikov. Compt. rend. acad. sci. U.R.S.S. A1932, 248-50 (1932) (250 in German).

The chemical composition of certain foods. J. S. Hopburn and others. Am. J. Pharm. 105, 547-9 (1933).

The complementary factors in yeast. A. Janke and A. Szilvinyi. Brauer-Hopfen-Ztg. Gambrinus 60, 19-26 (1933).

Muscle adenylic acid from yeast and yeast adenylic acid from pancreas. The nomenclature of adenylic acids. F. Lindner. Z. physiol. Chem. 218, 12-16 (1933).

Distribution of bound and free flavin in plants. H. v. Euler, E. Adler and A. Schlötze. Z. physiol. Chem. 226, 87-94 (1934).

Carbon content of dry substance of yeast. V. Koudelka. Arhiv Hem. Farm., Warsaw, 8, 29-34 (35 in German)(1934).

The radium content of plants and waters. B. K. Brunovskii and K. G. Kunashova. Trav. lab. biogéochim. acad. sci. U.S.S.R. 3, 31-41 (1935)(in German).

Changes in the flavin content of yeast. L. B. Pett. Arkiv Kemi Mineral. Geol. 11B, No. 53, 6 pp. (1935).

A yellow, sulfur-containing pigment from yeast. R. Kuhn, T. Wagner Jauregg, F. W. van Klaveren and H. Vetter. Z. physiol. Chem. 234, 196-200 (1935).

Factor L₂, a secondary dietary factor for lactation. W. Nakahara, F. Inukai, and S. Ugami. Proc. Imp. Acad., Tokyo, 12, 289-91 (1936).

The occurrence of chitin in microorganisms. M. Schnidt. Arch. Mikrobiol. 7, 241-60 (1936).

Constitution of the cerebrine of beer yeast. E. Ruppel. Bull. chim. biol. 19, 1165-72 (1937).

A dinucleotide pyrophosphoric acid of yeast. W. Kiessling and O. Meyerhof. Naturwissenschaften 26, 13-14 (1938).

Variations in growth and chemical constitution of yeast grown in different media. W. M. Clark. J. Bact. 35, 68-9 (1938).

Biochemistry of Torula utilis III. Comparative studies on the phosphorus content of T. utilis and beer yeast. F. Just and H. Fink. Biochem. Z. 303, 1-9 (1939); IV. Total sulfur, glutathione and cystine contents of different yeasts. Ibid. 234-41; VI. Calculated and experimentally determined quantities of fermentation and propagation substance remaining between the cells of pressed yeast. F. Just. Ibid. 306, 33-62 (1940).

Isolation of cyclic peptides from yeast. N. Sadikova. Compt. rend. acad. sci. U.R.S.S. (n.s.) 25, 598-600 (1939).

Yeast mannan. R. Garzuly-Janke. J. prakt. Chem. (n.s.) 156, 45-54 (1940).

Enanthic ether from yeast residues. O. G. Morgenshtorn. Vinodelie Vinogradarstvo SSSR 1940, No. 6, 10-11; Chem. Abstr. 37, 3876 (1943).

A substance in yeast which reduced Tillmann's indicator. J. Tikka and E. K. Heino. Suomen Kemistilehti 14B,1 (1941) (in German)

A previously undiscovered radioactive constituent of yeast. J. Hoffmann. Biochem. Z. 311, 311-16 (1942).

The lead content of yeast. P. W. Danckwortt. Z. Untersuch. Lebensm. 84, 416-18 (1942).

Copper and iron in worts, yeast and beer. P. P. Gray and I. Stone. Wallerstein Labs. Commun. 5, 193-9 (1942); Am. Soc. Brewing Chemists Proc. 5, 67-75 (1942).

The practical utilization of yeast. I. Notes on the composition of yeast. O. v. Soden. Z. Volksornahr. 17, 267-70 (1942); Chem. Abstr. 38, 2685 (1944)

Uranium taken up in the human body by food and drink. J. Hoffmann. Chem. Ztg. 67, 49-52 (1943).

Coproporphyrin

Natural porphyrins. XII. Etioporphyrin from uroporphyrin. H. Fischer and J. Hilger. Z. physiol. Chem. 140, 223-43 (1924).

Coproporphyrin synthesis by yeast and factors which influence it. I. H. Fischer and H. Fink. Z. physiol. Chem. 140, 57-68 (1924).

The natural porphyrins. X. Blood pigment in yeast, demonstration of porphyrin in plants. H. Fischer and J. Hilger. Z. physiol. Chem. 138, 288-306 (1924).

Coproporphyrin synthesis by yeast and factors which influence it. II. Analysis of crystallized coproporphyrin copper from fresh yeast and the increase of porphyrin by additions. H. Fischer and H. Fink. Z. physiol. Chem. 144, 101-22 (1925).

Coproporphyrin synthesis by yeast and factors which influence it.
III. Coproporphyrin ester from pure cultures of Saccharomyces
anamensis. H. Fischer and H. Fink. Z. physiol. Chem. 150, 243-60
(1925).

Coproporphyrin synthesis by yeast and factors which influence it.
IV. H. Fischer and H. Hilmer. Z. physiol. Chem. 153, 167-214 (1926)

Correction of the paper by H. Fischer and H. Hilmer. "Coproporphyrin
synthesis by yeast and factors which influence it," and the "Comment
by H. Fischer. O. Schumm. Z. physiol. Chem. 156, 159-60 (1926).

Enzymes, co-enzymes and biocatalysts in yeasts rich in coproporphyrin.
I. The zymase and oxido-reductase system. H. v. Euler, H. Fink
and R. Nilsson. Z. physiol. Chem. 158, 302-22 (1926).

The porphyrin from yeast. III. O. Schumm. Z. physiol. Chem. 159
192-3 (1926).

The porphyratin from yeast and plant seeds. O. Schumm. Z. physiol.
Chem. 154, 171-97 (1926).

Enzymes, coenzymes and biocatalysts in yeasts rich in copropor-
phyrin. II. H. v. Euler and H. Fink. Z. physiol. Chem. 162, 272-30
(1927).

The iron porphyratin from oats and yeast. IV. The transformation of
hematoporphyrin into hemateric acid and the reversible side chain
reaction of hematin. 2. O. Schumm with E. Mertens. Z. physiol. Chem.
170, 1-12 (1927).

Synthesis of coproporphyrin by dried yeast. H. Fink and K. Weber.
Wochschr. Brau. 45, 478-80 (1928).

The porphyrin and blood pigment of the yeast cell. R. M. Mayer.
Z. physiol. Chem. 177, 47-67 (1928).

The natural porphyrins. XXII. Preparation of hemin from yeast.
H. Fischer and Schwerdtel. Z. physiol. Chem. 175, 248-60 (1928).

Coproporphyrin synthesis by yeast and factors which influence it.
VI. Cell-free increase in coproporphyrin. R. M. Mayer. Z. physiol.
Chem. 179, 99-116 (1928).

Coproporphyrin of yeast. H. Fink. Biochem. Z. 211, 65-130 (1929).

The isoelectric point of coproporphyrin and its physiological
significance. H. Fink. Naturwissenschaften 17, 388-9 (1929).

Porphyrins in biology and pathology. V. Formation of porphyrins by yeast poisoned with sulfonal. J. Thomas. Bull. soc. chim. biol. 21, 1033-8 (1939).

The formation of porphyrins by yeast cells and by enzymes extracted from yeast. J. Thomas and E. J. Bigwood. Intern. Congr. Microbiol. Rept. Proc. (N. Y. 1939) 3, 249 (1940).

Formation of porphyrin by autolyzing yeast and by yeast press juice. C. Rimington. Nature 151, 393 (1943).

Cozymase

The thermostability of coenzyme of yeast and its differentiation from vitamin B. T. Thelin. Z. physiol. Chem. 115, 235-56 (1921).

Fermentation coenzyme (cozymase) of yeast. I. H. v. Euler and K. Myrback. Z. physiol. Chem. 131, 179-203 (1923); II, Ibid, 133, 260-78 (1924); III. Ibid. 136, 107-29 (1924); IV. Ibid. 138, 1-10 (1924); V. The function of cozymase in fermentation. Ibid. 139, 15-23 (1924); VI. Further attempts at isolation. Ibid. 281-306.

Apozymase and cozymase: Phosphorylation. C. Neuberg and A. Gottschalk. Biochem. Z. 161, 244-56 (1925).

Cozymase. VII. H. v. Euler and R. Nilsson. Z. physiol. Chem. 148, 23-40 (1925).

Cozymase in strongly respirant plant organisms. H. v. Euler and E. Nordenfelt. Arkiv Kemi Mineral. Geol. 9, No. 35, 1-6 (1926).

Cozymase and coreductase. H. v. Euler and R. Nilsson. Z. physiol. Chem. 160, 234-41 (1926).

Purification studies on the cozymase of yeast. R. Nilsson. Arkiv Kemi Mineral. Geol. 9, No. 31, 1-22 (1926).

The points of attack of cozymase in the fermentation of glucose and hexosediphosphoric acid. A. Gottschalk. Z. physiol. Chem. 170, 264-73 (1927).

The first stage of biological sugar decomposition. H. v. Euler K. Myrback and R. Nilsson. Ann. acad. sci. Fennicae A29, 13 pp. (1927).

Cozymase. X. H. v. Euler, R. Nilsson and B. Jansson. Z. physiol. Chem. 163, 202-18 (1927).

Cozymase. A study of purification methods. A. L. Raymond and H. M. Winegarden. J. Biol. Chem. 74, 175-88 (1927).

The specific activators of fermentation enzymase. I. H. v. Euler and R. Nilsson. Z. physiol. Chem. 162, 264-71 (1927).

Cozymase and the activation of fresh yeast fermentation by yeast extract. K. Myrback and H. v. Euler. Z. physiol. Chem. 176, 258-6 (1928).

Methylglyoxalase and cozymase. A. Gottschalk. Z. physiol. Chem. 176, 314-6 (1928).

Comparative investigations on the cozymase requirements of yeast in the fermentation of hexosemonophosphoric acid and hexosediphosphoric acid. A. Gottschalk. Z. physiol. Chem. 173, 184-7 (1928).

Cozymase and its determination. K. Myrback. Z. physiol. Chem. 177, 158-69 (1928).

Cozymase in yeast. K. Myrback. Svensk Kem. Tid. 42, 3-8 (1929).

Studies on the action of coenzyme. I. Inhibition of glucolysis and the splitting of ammonia. H. K. Barronscheen and W. Filz. Biochem. Z. 240, 409-22 (1931).

Transformation of acetaldehyde by yeast. II. Cozymase action. F. Zuckerkandl and L. Messiner-Klebermass. Biochem. Z. 255, 330-43 (1932).

Further investigations on yeast cozymase. K. Myrback, H. v. Euler and H. Hellström. Z. physiol. Chem. 212, 7-25 (1932).

Yeast cozymase. Supplement. K. Myrback, H. v. Euler and H. Hellström. Z. physiol. Chem. 214, 184 (1933).

Further experiments on the cozymase of yeast. K. Myrback. Z. physiol. Chem. 219, 173-6 (1933).

Activation of yeast alcohol dehydrogenase by coenzyme. J. Lehmann. Biochem. Z. 272, 95-103 (1934).

Cozymase. II. Isolation. K. Myrback and H. Larsson. Z. physiol. Chem. 225, 131-40 (1934).

The relationship of cozymase and an inhibitory substance in yeast cells. H. v. Euler and E. Adler. Arkiv Kemi Mineral. Geol. 12B, No. 5, 6 pp. (1935).

Balance between cozymase and dihydrocozymase. E. Adler and F. Calvet. Arkiv Kemi Mineral. Geol. 12B, No. 32, 7 pp. (1936).

A by-product in the preparation of cozymase from yeast. F. Schlenk and W. Glenn. Svensk Kem. Tid. 49, 181-4 (1937).

Inactivation and reactivation of the cozymase in dry and live yeast. A. Lennerstrand. Naturwissenschaften 26, 818-19 (1938).

Cozymase and nicotinic acid amide content of the animal body and of yeast. H. v. Euler, H. Heiwinkel, F. Schlenk, and B. Högberg. Z. physiol. Chem. 256, 208-28 (1938).

Coenzyme factor of yeast. D. E. Green and J. G. Dowan. Biochem. J. 32, 1200-3 (1938).

The preparation of coenzyme I from yeast. S. Williamson and D. F. Green. J. Biol. Chem. 135, 345-6 (1940).

Preparation of pure cultures

Investigation of pure yeasts. J. Wortmann. Landw. Jahrb. 21, 901-936, 23, 535-621; 27, 631-714 (1892-98).

The culture of pure yeast and the significance of the method of culture upon the chemical and physiological constitution of the yeast. F. Schoenfeld and H. Krampf. Wochschr. Brau. 28, 157-60, 174-7, 182-4 (1911).

The sensitiveness of various yeast types toward hops. A contribution to the system of natural pure culture. W. Rommel. Wochschr. Brau. 29, 429-31 (1912).

Cultivation of pure yeast on the practical scale. C. Engelhard. Z. ges. Brauw. (n.s.) 37, 345-7 (1914).

The manufacture of alcohol from brown sugar and a method of preparing the yeast. L. Buhot. Bol. ind. con. trabajo, Mexico, 4, 141-2 (1920).

New methods of reproduction of pure culture compressed yeast and formation of new forms of yeast. V. Jonáš. Chem. Obzor 4, 345-7 (347 in English)(1929); Chem. Abstr. 24, 5107 (1930).

Simple method for the pure culture of yeast. H. Fink and R. Kühles. Wechschr. Brau. 47, 152 (1930).

The factory-scale manufacture of pure yeast and the pure yeast culture in the history of the development of brewing. E. Elion. Chem. Weekblad 29, 470-5 (1932)(in German).

Apparatus for pure yeast culture. A. L. Nugey. Brewery Age 3, No. 8, 48-54 (1935).

Use of pure yeast cultures (in brewing). J. Raux. Brasserie et malterie 26, 33-8, 49-54 (1936); Chem. Abstr. 30, 8512 (1936).

Advice on yeast culture preparation from the institute for the fermentation industry for the new distillation season. F. Wendel. Z. Spiritusind. 64, 202 (1941).

Cytochrome

Cytochrome, a respiratory pigment, common to animals, yeast and higher plants. D. Kolin. Proc. Roy. Soc. London B98, 312-39 (1925).

Does yeast contain blood pigment? O. Schumm. Z. physiol. Chem. 154, 314-7 (1926).

Transformation of the blood pigment by yeast. I. H. Fischer and F. Lindner. Z. physiol. Chem. 153, 54-66 (1926).

The cytochrome in yeast cells. Preliminary paper. H. v. Euler and H. Fink. Z. physiol. Chem. 164, 69-76 (1927).

Cytochrome in yeast cells. II. H. v. Euler, H. Fink and H. Hellström. Z. physiol. Chem. 169, 10-51 (1927).

Cytochrome and the catalase action of yeast. H. v. Euler and H. Hellström. Z. physiol. Chem. 190, 189-98 (1930).

Cytochrome and yeast iron. T. B. Coolidge. J. Biol. Chem. 98, 755-64 (1932).

Porphyrin compounds derived from bacteria. F. M. Stone and C. B. Coulter. J. Gen. Physiol. 15, 629-39 (1932).

Red fluorescence of a preparation of oxidized cytochrome. E. J. Bigwood, J. Ansay and J. Thomas. Compt. rend. soc. biol. 112, 1584- (1933).

Cytochrome C. K. Zeile and F. Router. Z. physiol. Chem. 221, 101-16 (1933).

(Spectrum absorption) studies of the oxidized form of yeast cytochrome. E. J. Bigwood, J. Ansay and J. Thomas. *Ann. physiol. physicochim. biol.* 9, 837-42 (1933).

Effects of agents on the reduction of indicators and of cytochrome by yeast cells. L. V. Beck and J. P. Robin. *J. Cellular Comp. Physiol.* 4, 527-44 (1934).

Cytochrome. E. Haas. *Naturwissenschaften* 22, 207 (1934).

Action of aldehydehydrogenase of milk on cytochrome C isolated from yeast. E. J. Bigwood, J. Thomas and D. Wolfers. *Compt. rend. soc. biol.* 118, 1488-90 (1935).

Inhibitory action of the lower aliphatic acids and aldehydes on cytochrome reduction in yeast. L. V. Beck. *Biochem. J.* 29, 2424-32 (1935).

Oxygen pressure and cytochrome. L. Massart. *Arch. intern. pharmacodynamie* 53, 562-8 (1936).

Absorption spectra of reduced cytochrome from bakers' yeast and beer yeast. E. Elion. *Bull. soc. chim. biol.* 18, 165-72 (1936).

The mechanism of cytochrome action. T. B. Coolidge. *J. Biol. Chem.* 123, 451-9 (1938).

Cytochrome spectrum of dry yeast. H. Fink and R. Lechner. *Biochem. Z.* 304, 425-35 (1940).

A new soluble cytochrome component from yeast. S. J. Bach, M. Dixon and D. Keilin. *Nature* 149, 21 (1942).

The cytochrome C content of top yeast during growth. H. Borei and A. Sjoden. *Naturwissenschaften* 31, 324-5 (1943).

Dehydrogenase

The reductase (dehydrogenase) of yeasts. I. H. v. Euler and R. Nilsson. *Z. physiol. Chem.* 149, 44-51 (1925); II. *Ibid.* 151, 155-64 (1926); III. *Ibid.* 152, 264-70 (1926); IV. Attempts to isolate the coreductase. *Ibid.* 155, 31-41 (1926). V. *Ibid.* 162, 72-84 (1926).

The action of adenosinemonophosphoric acids and adenosinetriphosphoric acid on dehydrogenation processes by plant and animal enzymes. H. J. Deuticke. *Z. physiol. Chem.* 192, 193-216 (1930).

Lactic acid dehydrogenase of yeast. A. Hahn, E. Fischback and H. Niemer. *Z. Biol.* 93, 121-2 (1932).

Mechanism of oxidation processes. XXX. Dehydrogenating enzyme system of yeast. H. Wieland and O. B. Claren. Ann. 492, 183-212 (1932).

An alcoholdehydrogenase isolated from yeast. D. Müller. Biochem. 262, 239-47 (1933).

The components of dehydrogenase systems. I. Dehydrogenation of alcohol and Robison ester. H. v. Euler and E. Adler. Z. physiol. Chem. 226, 195-212 (1934).

Tissue metabolism. V. The lactic dehydrogenases of yeast and heart muscle. E. Boyland and M. E. Boyland. Biochem. J. 28, 1417-21 (1934).

Enzymic oxido-reduction by yeast dehydrogenase. H. v. Euler and C. Martins. Arkiv Kemi Mineral. Geol. 11B, No. 22, 6 pp. (1934).

The dehydrogenases of yeast. Robert Sonderhoff. Ergeb. Enzymforsch. 3, 163-84 (1934).

Alcoholdehydrogenase from yeast. II. D. Müller. Biochem. Z. 268, 152-7 (1934).

Mechanism of oxidation processes. XLI. Further experiments on the dehydrogenation of alcohol by yeast. H. Wieland and F. Wille. Ann. 515, 260-72 (1935).

Influence of the yellow respiratory enzyme on dehydrogenation of lactacidogen and hexosediphosphoric acid by yeast dehydrogenase. A. Hahn, H. Niemer and B. Freytag. Z. Biol. 96, 453-8 (1935).

Components of the dehydrogenase system. VI. Dehydrogenation of hexoses in the presence of adenosinetriphosphoric acid. H. v. Euler and E. Adler. Z. physiol. Chem. 235, 122-153, (1935); VII Lactic acid dehydrogenase from yeast. E. Adler and M. Michaelis. Ibid. 154-53; IX. The codehydrogenases: cozymase and "codehydrogenase II." H. v. Euler and E. Adler, Ibid. 238, 233-60 (1936); XII. Mechanism of the dehydrogenation of alcohol and triose phosphates and of their simultaneous oxidation and reduction. H. v. Euler, E. Adler and H. Hells. Ibid. 241, 239-72 (1936).

Activator of alanine dehydrogenase. N. B. Das. Naturwissenschaften 26, 168 (1938).

Mechanism of the oxidation process. L. The method of action of the dehydrogenating enzyme of yeast. H. Wieland, O. Probst and M. Crawford. Ann. 536, 51-68 (1938).

Lactic dehydrogenase of yeast. S. J. Bach, M. Dixon and L. G. Zervas. Nature 149, 48-9 (1942).

Use in Diet Deficiencies

Substance from yeast and certain foodstuffs which prevents polyneuritis. C. Funk. Brit. Med. J. 1912, II, 787.

Protective and curative properties of certain foodstuffs against polyneuritis induced in birds by a diet of polished rice. E. H. Cooper. J. Hyg. 12, 436 (1912).

Therapeutic action of yeast in alimentary, multiple polyneuritis in pigeons and guinea pigs. M. Barsickow. Biochem. Z. 48, 418-24 (1913).

Studies on beri-beri. VII. Chemistry of the vitamin fraction from yeast and rice polishings. C. Funk. J. Physiol. 46, 173-9 (1913).

The curative action of autolyzed yeast against avian polyneuritis. E. A. Cooper. Biochem. J. 8, 250-2 (1914).

The therapeutic effect of wheat germ and of yeast in infantile scurvy. A. F. Hess. Proc. Soc. Exptl. Biol. Med. 13, 145-6 (1916).

Vitamins and nutritional diseases. A. Seidell. Pub. Health Repts. U. S. Pub. Health Serv. 31, 364-70 (1916).

Infantile scurvy. IV. The therapeutic value of yeast and wheat embryo. A. F. Hess. Am. J. Diseases Children 13, 98-109 (1917).

The dietary deficiency of cereal foods with reference to their content in "antineuritic vitamin." C. Voegtlin, G. C. Lake and C. N. Myers. Pub. Health Repts. U. S. Pub. Health Serv. 33, 647-66 (1918).

Treatment of human beri-beri with autolyzed yeast extract. N. M. Salaeby. Philippine J. Sci. 14, 11-2 (1919).

Organic foodstuffs with a specific action. E. Abderhalden. Pflüger's Arch. ges. Physiol. 178, 260-308 (1920).

A study of the factors which interfere with the use of yeast as a test substance for the antineuritic substance. G. de Paulo Souza and E. V. McCollum. J. Biol. Chem. 44, 113-29 (1920).

Artificial diet with pigeons. The effects of a deficiency of brewers' yeast. H. Simonnet. Bull. soc. sci. hyg. aliment. 9, 69-85 (1921).

The addition of yeast to a milk diet. P. B. Hawk, C. A. Smith, and O. Bergeim. Proc. Soc. Exptl. Biol. Med. 18, 168 (1921).

Effect of yeast on the utilization of food by white mice. R. R. Renshaw. Am. Nat. 45, 73-8 (1921).

The vitamins of yeast and their role in animal nutrition. C. Funk and H. E. Dubin. Proc. Soc. Exptl. Biol. Med. 19, 15 (1921).

Alcoholic extracts of brewers' yeast in avian polyneuritis. H. Penau and H. Simonnet. Compt. rend. soc. biol. 85, 198-200 (1921).

Yeast as a source of vitamin B for the growth of rats. C. Kennedy and L. S. Palmer. J. Biol. Chem. 54, 217-32 (1922).

Studies in the physiology of vitamins. III. A comparison of the effects of feeding extracts of muscle and of yeast, respectively. IV. Parenteral administration of products containing vitamin B. Mammalian experiments. G. R. Cowgill. Proc. Soc. Exptl. Biol. Med. 19, 282-4 (1922).

Organic foodstuffs with specific action. IV. Gas metabolism changes in pigeons fed upon polished rice with and without the addition of yeast to the diet. E. Abderhalden. Pflüger's Arch. ges. Physiol. 187, 80-9 (1921); XV. Ibid. 195, 199-226 (1922); XVI. Comparison of the action of heated and unheated bran and yeast and of the organs of normally nourished pigeons with those of pigeons fed upon polished rice. Ibid. 432-59.

Experimental rickets in rats. V. The effect of varying the organic constituents of a ricket-producing diet. A. M. Pappenheimer, G. F. McCann and T. F. Zucker. J. Exptl. Med. 35, 447-66 (1922).

Can yeast be used as a source of the antineuritic vitamin in infant feeding? A. L. Daniels. Am. J. Diseases Children 23, 41-50 (1922).

Vitamin B and the gonads. H. Cotta. Compt. rend. soc. biol. 88, 373-5 (1923).

Studies on by-product yeast. J. S. Hepburn. J. Biol. Chem. 55, xli-xlii (1923).

A comparison of the values of yeast and of orange juice with those of marmite and of decitrated lemon juice, respectively, in the calcification of the skeleton. V. Korenschevsku and M. Carr. Biochem. J. 18, 1319-21 (1924).

Growth and maintenance of the rat under an artificial diet deprived at the same time of factor B and carbohydrates. L. Randoin and H. Simonnet. Compt. rend. 179, 1219-22 (1924).

The action of vitamins A and B on unbalanced dietaries. S. Ederer. Biochem. Z. 158, 197-202 (1925).

Biochemical study of by-product yeast. J. S. Hepburn. J. Franklin Inst. 200, 767-70 (1925).

Fertility of the white rat on purified rations. A. L. Daniels and M. K. Hutton. Proc. Soc. Exptl. Biol. Med. 23, 225-7 (1925).

A study of pellagra preventive action of dried beans, casein, dried milk and brewers' yeast, with a consideration of the essential preventive factors involved. J. Goldberger and W. F. Tanner. Pub. Health Repts. U. S. Pub. Health Serv. 40, 54-80 (1925).

Yeast in the treatment of pellagra and black tongue. J. Goldberger, G. A. Wheeler and W. F. Tanner. Pub. Health Repts. U. S. Pub. Health Serv. 40, 927-8 (1925).

Experimental pellagra-like condition in the albino rat. J. Goldberger and R. D. Lillie. Pub. Health Repts. U. S. Pub. Health Serv. 41, 1025-9 (1926).

Avitaminosis. M. Tomita, Y. Komori and Y. Sendju. Z. physiol. Chem. 158, 80-9 (1926).

Butter, fresh beef and yeast as pellagra preventives, with consideration of the relation of factor P-P of pellagra (and black-tongue of dogs) to vitamin B. J. Goldberger, G. A. Wheeler, R. D. Lillie and L. M. Rogers. Pub. Health Repts. U. S. Pub. Health Serv. 41, 297-318 (1926).

Biological value of "standard" yeast extract used as a source of water-soluble vitamin B. L. Randoin and R. Lecoq. J. pharm. chim. 5, 147-54 (1927).

Alimentary dystrophy. E. Abderhalden. Pflüger's Arch. ges. Physiol. 217, 88-104 (1927).

Further studies on the antirachitic activation of substances by cathode rays. A. Knudson. Science (n.s.) 66, 176-8 (1927).

The dietetically and therapeutically important constituents of killed yeast. M. Winckel. Munch. med. Wochschr. 74, 1274-5 (1927).

Antirachitic activity of irradiated cholesterol, ergosterol and allied substances. A. F. Hess. J. Am. Med. Assoc. 89, 337-9 (1927).

Vitamin B requirements for successful reproduction and rearing of the young. H. G. Miller. Am. J. Physiol. 79, 255-9 (1927).

Dietary requirements for fertility and lactation. XIV. A quantitative biological method for the study of vitamin B requirements for lactation. B. Sure. J. Biol. Chem. 76, 673-83 (1928).

Dietary requirements for fertility and lactation. XVI. Potency of "vitavose" versus dehydrated yeast in vitamin B. B. Sure. Univ. of Arkansas. Proc. Soc. Exptl. Biol. Med. 25, 603-5 (1928).

Experimental black tongue and the black-tongue preventive yeast. Goldberger, G. A. Wheeler, R. D. Hillie and L. M. Rogers. Pub. Health Rpts. U.S. Pub. Health Serv. 43, 657-94 (1928).

Evaluation of dry yeast with respect to its biological action. W. Weichardt and H. Unger. Pharm. Ztg. 73, 526-7 (1928).

Vitamin requirements of nursing young. VII. The production of uncomplicated vitamin B deficiency in the nursing young of the albino rat. B. Sure and M. E. Smith. J. Nutrition 1, 537-40 (1929).

Dietary requirements for fertility and lactation. II. The role of vitamin B in lactation and vitamin requirements of nursing young. B. Sure. Ark. Agr. Expt. Sta. Bull. 251, 62 pp. (1930).

Deficiencies of synthetic diets in chick nutrition. A. G. Hogan and C. L. Shrewsbury. J. Nutrition 3, 39-48 (1930).

Maintenance nutrition in the adult pigeon and its relation to torulin (vitamin B₁). I. C. W. Carter, H. W. Kinnersley and R. A. Peters. Biochem. J. 24, 1832-43 (1930).

The treatment of avitaminosis with dried brewers' yeast. M. M. Gorbunova. Arkh. biol. Nauk 30, 581-2 (1930)(582-3 in French).

Urinary syndrome of metabolic disturbances caused by lack of vitamin B in the rat. J. Roche. Bull. soc. chim. biol. 12, 342-56 (1930).

A quantitative comparison of the curative activity of torulin (vitamin B₁) upon the adult pigeon and the adult white rat. H. W. Kinnersley, R. A. Peters and V. Reader. Biochem. J. 24, 1820-3 (1930).

Experiments on nutrition. X. Comparative vitamin B₁ values of food-stuffs. Cereals 2. R. H. A. Plimmer, W. H. Raymond and J. Lowndes. Biochem. J. 25, 691-704 (1931).

Observations on certain factors necessary for the normal nutrition of the rat. B. C. Guha. Biochem. J. 25, 960-71 (1931).

The fat and glycogen metabolism of resting and active rats. T. Osugi. Z. physiol. Chem. 199, 81-92 (1931).

Nutritive value of milk. I. Deficiencies on an exclusive milk diet and how to overcome them. W. E. Krauss. Bull. Ohio Agr. Exptl. Sta. 477, 3-54 (1931).

Additional factors in the treatment of late rickets and osteomalacia. D. C. Wilson. Lancet 222, I, 1142-3 (1932).

Addition of raw beef or meat scrap to a wheat-milk diet. W. C. Russell. J. Nutrition 5, 347-57 (1932).

Vitamin B₂ content of various materials compared by their power to promote growth and to cure dermatitis respectively. M. H. Roscoe. Biochem. J. 27, 1537-9 (1933).

Pellagra-preventive of autoclaved dried yeast, canned flaked haddock and canned green peas. G. A. Wheeler. Pub. Health Repts. U. S. Pub. Health Serv. 48, 67-77 (1933).

Effect of fatty acids on nutrition. II. Experiments with diets composed of rice, oil and lipid containing linoleic or linolenic acid. U. Tange. Sci. Pap. Inst. Phys. Chem. Res., Tokyo, 22, 1-14 (1933).

The pharmacological action of some constituents of yeast and of oryzenin. C. Hasegawa. Japan J. Med. Sci., IV, Pharmacol., 8, 8* - 12* (1934)(in German).

A study of the therapeutic value of yeast. F. A. Brown, M. B. Campbell, N. B. Stoner and I. G. Macy. J. Am. Dietetic Assoc. 10, 29-39 (1934).

The effect of the administration of yeast upon A-hypervitaminosis in rats. A. Kanter. Klin. Wochschr. 13, 1157 (1934).

Studies of vitamins B and G in growth and lactation in the rat. (a) The effects of extracts of vitamin B and G. (b) The distribution of vitamin G. J. F. Feaster. Iowa State Coll. J. Sci. 9, 147-9 (1934).

Pharmacological action of vitamin B, vitamin B preparation and its constituents, especially adenylylthiomethylpentose. C. Hasegawa. Fukuoka-Ikwadaiigaku Zasshi. 28, 2892-949 (1935).

Differential antirachitic activity of vitamin D milks. R. W. Haman and H. Steenbock. J. Nutrition 10, 653-64 (1935).

Chorea minor and avitaminosis. The successful therapeutic use of yeast. F. Widenbauer. Klin. Wochschr. 14, 608-12 (1935).

Correlation between B₄-avitaminosis and the composition of the diet. C. Y. Chen and H. Ariyama. J. Agr. Chem. Soc. Japan. 11, 250-4 (1936).

Effects of yeast upon malnutrition of rats caused by high-sucrose ration. Preliminary Report. T. Ariyama. J. Agr. Chem. Soc. Japan. 12, 1-10 (1936).

Differentiation of the growth-promoting factors in yeast which are related to rat pellagra. F. J. Gorter. Arch. Néerland. physiol. 538-53 (1936).

Cataract- and dermatitis- producing nutritional factors. A. F. Morgan and B. B. Cook. Proc. Soc. Exptl. Biol. Med. 34, 281-5 (1936).

The treatment of stomatitis caused by diet deficiency. W. R. Aykroyd and B. G. Krishnan. Indian J. Med. Res. 25, 643-6 (1938).

Vitamins in relation to the prevention and treatment of pellagra. W. H. Sebrell. J. Am. Med. Assoc. 110, 1665-72 (1938).

Effect of yeast and nicotinic acid on porphyrinuria. T. D. Spies, E. S. Gross and Y. Saski. Proc. Soc. Exptl. Biol. Med. 38, 178-80 (1938).

Prophylaxis and therapy of vitamin B hypovitaminosis with concentrated yeast (Philocytin). F. Diehl. Munch. med. Wochschr. 86, 1301-5 (1938).

Comparison of the vitamin activity of Bacterium bifidus, dried yeast and Bacillus coli. E. R. Reichelt. Monatsschr. Kinderheilk. 77, 327-34 (1939).

Changes of the fur of rats produced by lack of certain factors of the vitamin B complex. II. G. Lunde and H. Kringstad. Z. physiol. Chem. 257, 201-6 (1939).

Growth-promoting substances of yeast. A. Koch. Naturwissenschaften. 28, 24-7 (1940).

The effectiveness of a yeast-peanut butter mixture in vitamin B complex deficiencies. A progress report. T. D. Spies, H. M. Grant and J. M. Grant. Southern Med. J. 34, 159-61 (1941).

The relation between dietary deficiency and the occurrence of papillary atrophy of the tongue and oral leucoplakia. J. C. Abels, P. E. Rekers, H. Martin and C. P. Rhoads. Cancer Res. 2, 381-93 (1942).

Vitamin M. Its relationship to a certain syndrome of diarrhea. R. F. Villada. *Prensa méd. mex.* 7, 125-6 (1942); *Chem. Abstr.* 37, 917 (1943).

The antirachitic action of irradiated dried beer yeast. A. Scheunert, G. Krockert and R. Specht. *Vitamine Hormone* 3, 37-49 (1942); *Chem. Abstr.* 37, 6014 (1943).

Dietary disturbance of metabolism and its prevention with cystine. A. Hock and H. Fink. *Z. physiol. Chem.* 278, 136-42 (1943).

Drying and Dried

Protective action of sugar in the drying of yeast. F. Hayduck and D. Bulle. *Wochschr. Brau.* 29, 489-94 (1912).

Dried yeast. H. Zellner and H. Wolff. *Pharm. Ztg.* 58, 1046-7 (1913).

Medicinal dry yeasts and their self-fermentation. A. Stephan. *Pharm. Post* 46, 849-50 (1913).

Synthesizing action of an enzyme contained in air dried bottom yeast. E. Bourquelot, H. Hérissey and M. Bridel. *Compt. rend. soc. biol.* 73, 641-3 (1912); *Compt. rend.* 156, 168-70 (1913).

Drying of waste yeast after mixing with moisture-absorbing substances. T. Methner. *Chem. Ztg.* 40, 572 (1916).

Utilization of yeast. K. Schweizer. *Schweiz. Chem. Ztg.* 1919, 33-6, 69-72 (1919); *Chem. Abstr.* 13, 2957 (1919).

Debittered dried yeast. L. J. Riley, *Chem. Age, London*, 2, 497 (1920).

Dried yeast. J. Pritzker. *Schweiz. Chem. Ztg.* 1921, 578-81 (1921); *Chem. Abstr.* 16, 1282 (1922).

Dried yeasts. H. v. Euler and K. Myrback. *Z. physiol. Chem.* 117, 28-40 (1921).

Preparation of pure dry pitching yeast. J. Raux and E. Bloch. *Brewers' J., London*, 59, 40-1 (1923); *Chem. Abstr.* 17, 2934 (1923).

The spontaneous fermentation of dry yeast. K. Myrback. *Chem. Zelle Gewebe* 12, 61-4 (1924).

Dried yeast. II. H. v. Euler and G. Westling. *Z. physiol. Chem.* 140, 164-76 (1924).

Dried yeast. H. Sobotka. *Z. physiol. Chem.* 134, 1-21 (1924).

Dried yeast. H. Sobotka. Z. physiol. Chem. 145, 91-4 (1925).

Dry yeast and yeast extract for medicinal and pharmaceutical purposes. W. Schoenniger. Pharm. Ztg. 70, 596-7 (1925).

Dry yeast. H. Ulex. Chem. Ztg. 50, 475-6 (1926).

The biological utilization of purified dry yeast preparation. Schittenhelm, Massatsch and Wernat. Biochem. Z. 180, 454-70 (1927).

Activation of the antirachitic factors in dry yeast. W. Kirsch. Biochem. Z. 196, 294-300 (1928).

Some constituents of dried yeast and yeast extracts: Their application in human nutrition. S. G. Willimott and F. Wokes. Lancet II, 668-73. (1928).

Dried yeast. K. Myrback and H. v. Euler. Z. physiol. Chem. 183, 226-36 (1929).

The salt effect on the induction period in the fermentation by yeast. H. Katagiri and G. Yamagishi. Biochem. J. 23, 654-62 (1929).

The use of culture media made from commercial dried yeast as a routine substitute for meat infusion peptone media. J. M. Neil J. Y. Sugg, L. V. Richardson and W. L. Fleming. J. Bact. 17, 3 (1929).

Fermentation and growth in dried yeast cells. III. C. Barthel, H. v. Euler and R. Nilsson. Z. physiol. Chem. 198, 251-9 (1931).

Brief contributions: IV. Stability of glucolase. C. Neuberg and M. Kobel. Biochem. Z. 238, 250-1 (1931).

Effect of heat on vitamin G potency of desiccated yeast. F. C. and D. G. Remp. Proc. Soc. Exptl. Biol. Med. 31, 624-6 (1934).

Pectin for manufacturing dried yeast. J. E. Brauer-Tuchorze. Brennerei Ztg. 51, 15 (1934); Chem. Abstr. 28, 5922 (1934).

Examination and evaluation of viable dry yeast. H. Damm. Apot. Ztg. 51, 907-10 (1936).

Living dry yeast from bottom-fermentation beer yeast. R. Koch. Wochschr. Brau. 54, 329-32 (1937).

Dry yeast. V. Elschansky. Petit J. brasseur 47, 481-2 (1939); Chem. Abstr. 35, 4911 (1941).

Properties of dried yeasts for medicinal and alimentary purposes: catalase content of yeast. M. Lindemann. Wochschr. Brau. 57, 161-4 (1940).

Drying of food yeast. A. S. Yakovenko. Lesokhim. Prom. 3, No. 7, 14-17 (1940); Chem. Abstr. 37, 3876 (1943).

Proteolytic decomposition during drying of yeast. A. S. Nechaeva. Biokhimiya. 5, 48-54 (54 in German) (1940).

Changes in the amino acid content of yeast during drying. A. A. Stafichuk. Lesokhim. Prom. 3, No. 7, 11-14 (1940); Chem. Abstr. 37, 1736 (1943).

Do losses of dry matter occur during the drying of yeast? H. Fink. R. Lechner and M. Ross. Wochschr. Brau. 57, 249-50 (1940).

Report of molasses laboratory. A. R. Lamb. Printed Repts. Hawaiian Sugar Planters' Assoc., Rept. Expt. Sta. 60, 123-5 (1941).

Phosphate elimination and permeability of dried bakers' yeast. K. Brandt. Biochem. Z. 312, 89-99 (1942).

Drum-drying brewers' yeast. R. V. Siebel, P. J. F. Weber and E. Singruen. Modern Brewery Age 27, No. 2, 74-9 (1942).

Spray-drying brewers' yeast. R. V. Siebel, P. J. F. Weber and E. Singruen. Modern Brewery Age 27, No. 1, 49-51 (1942).

Purification of effluents

The biological disposal of waste yeast. W. I. Dibdin. Sanit. Rec. 46, 601 (1910).

The treatment of waste waters from compressed yeast factories. P. Sander. Kleine Mitt. Ver. Wasser-, Boden-Lufthyg. 9, 56 (1933).

Purification of effluent from pressed yeast manufacture. W. Kiby. Chem. Ztg. 58, 600-3 (1934).

The purification of distillery wastes. H. Furkert. Vom Wasser 11, 167-74 (1936).

Purification of waste water from yeast factories. K. E. Jensen. Trans. 1st Intern. Chem. Eng. Congr. World Power Conf. 3, 253-268 (1936); Chem. Abstr. 31, 4030 (1937).

Effluents from the fermentation industry, their characters, purification and utilization. M. Strell. Wochschr. Brau. 53, 284-6 (1933).

The tank filter for the purification of sewage and trade wastes. H. Bach. Water Works Sewerage 84, 389-93, 446-9 (1937).

The effects of industrial wastes on sewage treatment. A. L. Faldes. Sewage Works J. 9, 985-97 (1937).

Agricultural utilization of waste water from the compressed-yeast industry. F. K. Beinert. Kulturtechniker 43, 35-62 (1940); Chem. Abstr. 35, 5248 (1941).

The biological purification of waste waters from yeast plant and distilleries. R. de Rycke, G. Batta and L. Bourge. Ann. zymol. 6, 369-80 (1940). (3?)

Value of sugar-industry waste water for fodder yeast preparation. I. K. Schneider. Z. Spiritusind. 63, 129 (1940); II. H. Fink and J. Schlie. Ibid. 129; III. H. Claassen. Ibid. 209; IV. G. Schlie. Ibid. 209.

Value of sugar industry waste waters for fodder yeast preparation. H. Claassen. Z. Spiritusind. 63, 83-4 (1940).

Constructing a treatment plant for industrial waste. J. W. Greenleaf. Civil Eng. 11, 483-6 (1941).

Some views and experiences on the treatment of trade wastes. M. E. D. Windridge. Surveyor 99, 297-9 (1941).

Industry abates stream pollution. I. H. H. Black and C. W. Klassen. Sewage Works Eng. 12, 74-9 (1941).

Enzymes, General

Studies on enzyme action. IX. The enzymes of yeast; amygdalase. R. J. Caldwell. Proc. Roy. Soc. London B79, 350-9 (1907).

The nucleic ferments of yeast. M. N. Straughn and W. Jones. J. Biol. Chem. 6, 245-55 (1909).

The action of enzymes in the "press fluid" of yeast. E. Buchner and H. Haehn. Biochem. Z. 19, 191-218 (1909).

The behavior of yeast enzymes, free and combined with protoplasm. H. v. Euler and S. Kullberg. Z. physiol. Chem. 73, 85-100 (1911).

A new glucolytic ferment in yeast. V. Birckner. J. Am. Chem. Soc. 34, 1213-29 (1912).

Comparative hydrolysis of saccharose by different acids in the presence of yeast sucrase. G. Bertrand and M. Rosenblatt. Bull. soc. chim. (4) 11, 176-86 (1912).

Chemical composition and formation of enzymes. VII. Development of some yeasts in various nutritive solutions. H. v. Euler and B. Palm. Z. physiol. Chem. 81, 59-70 (1912).

On the oxidations and cleavages of glucose. Yeast glucase, a new glucolytic ferment. V. Bircner. Univ. Calif. Publ. Physiol. 4, No. 16, 115-83 (1912).

What change does diastase undergo with acidification of the sediments and during the fermentation of the mash in distilleries and yeast factories? H. Lange. Brennerei Ztg. 1912, 6207-8 (1912); Chem. Abstr. 7, 2085 (1913).

The harmful action of enzymes; experiments with yeast. T. Bokorny. Allg. Brauer-Hopfenztg. 53, 2571-2 (1913); Chem. Abstr. 13, 1326 (1919).

Formation of enzymes. H. Zikes. Allg. Z. Bierbrau. Malzfabr. 41, 39 (1913); Chem. Abstr. 7, 2233 (1913).

Yeast reductase. S. Lvov. Biochem. Z. 66, 440-66 (1914).

Enzymes of washed zymen and dried yeast (Lebedev) III. Peroxidase, catalase, invertase and maltase. A. Harden and S. S. Zilva. Biochem. J. 8, 217-26 (1914); II. Reductase. A. Harden and R. V. Norris. Ibid. 100-6.

Enzymic formation of polysaccharides by yeast preparations. A. Harden and W. J. Young. Biochem. J. 7, 630-6 (1914).

Thermo-regeneration of diastases of yeast. G. Bertrand and M. Rosenblatt. Bull. soc. chim. 15, 762-5 (1914).

Reducing enzymes of dried yeast (Lebedev) and of rabbit muscle. A. Harden and R. V. Norris. Biochem. J. 9, 330-6 (1915).

Influence of killed yeast on digestive enzymes. M. Winckel. Münch. med. Wochschr. 62, 1007-8 (1915).

Influence of sodium hydroxide on the synthesizing and hydrolytic properties of α glucosidase (air-dried glucosidase obtained from "bottom" yeast). E. Bourquelot and A. Aubry. Compt. rend. 161, 184-6 (1915).

Stability of some yeast enzymes. A. Bau. Wochschr. Brau. 32, 141-3, 151-4, 159-62 (1915).

Observations upon the coenzyme of the yeast. S. Hagman. Biochem. Z. 69, 403-15 (1915).

Emulsin and myrosin in the compressed yeast from the Munich brewery, partly also in bakers' yeast. (Getreidepresshefe). Th. Bokorny. Biochem. Z. 75, 376-416 (1916).

Chemical composition and formation of enzymes. XII. H. v. Euler and E. Lowenhamm. Z. physiol. Chem. 97, 279-90 (1916).

Lebedev's yeast maceration juice. M. W. Beyerinck and J. J. van Hest. Folia microbiol. 4, 107-18 (1916).

Occurrence of emulsin-like enzymes, separable from yeast cells in bottom yeast; also, the absence of myrosin in Berlin top and bottom yeast. C. Neuberg and E. Farber. Biochem. Z. 78, 264-72 (1916).

The coagulating enzyme of the yeast cell. A. M. Nastjukov and N. S. Pyatnitskii. J. Russ. Phys. Chem. Soc., khim., 49, 183-6 (1917).

Enzyme action. II. Adsorption of amino acids and polypeptides by animal charcoal. Relation of the observed appearances to the cleavage of polypeptides by yeast juice. E. Abderhalden and A. Fodor. Fermentforsch. 2, 74-102 (1917); V. Ultrafiltration experiments with mixtures of amino acids or polypeptides with yeast juice. Evidence for the colloidal condition of enzymes and extension of the adsorption theory. E. Abderhalden. Ibid. 225-50 (1918).

Coenzyme of fermentation in the animal body. II. O. Meyerhof. Z. physiol. Chem. 102, 1-32 (1918).

Influence of certain substances extracted from yeast by alcohol on the activity of the yeast enzymes. E. Abderhalden and H. Schaumann. Fermentforsch. 2, 120-51 (1918).

Enzymic power of yeast. Th. Bokorny. Allg. Brauer-Hopfen-Ztg. 58, 1093-4 (1918); Chem. Abstr. 13, 2683 (1919).

Enzymic studies of Torula yeast. O. Svanberg. Fermentforsch. 2, 201 (1918).

Chemistry of enzymes. H. v. Euler. Z. Elektrochem. 24, 173-7 (1918).

Enzymic-chemical studies. H. v. Euler and O. Svanberg. Arkiv Kemi Mineral. Geol. 7, No. 11 (1918).

Yeast enzymes. Th. Bokorny. Allg. Brauer-Hopfen-Ztg. 59, 881-2, 889-90, 893-4 (1919); Chem. Abstr. 14, 1405 (1920).

Chemistry of enzymes. Th. Bokorny. Allg. Brauer-Hopfen-Ztg. 60, 705-6, 713-4 (1920); Chem. Abstr. 15, 2644 (1921).

Enzyme research and yeast fermentation. G. Wolff. Wochschr. Brau. 37, 27-9, 38-40, 46-8 (1920).

Enzyme action. VII. Influence of additions (toluene, chloroform, thymol and neutral salts) on the fermentative decomposition of dipeptides by means of yeast extract. E. Abderhalden and A. Fodor. Fermentsforsch. 4, 191-208 (1921).

The dependence of the reduction processes of yeast upon fermentation. S. L'vov. J. Russ. Bot. Congr. 1, 61 (1921); Chem. Abstr. 19, 3103 (1925).

An enzyme which brings about union into carbon chains (Carboligase). C. Neuberg and J. Hirsch. Biochem. Z. 115, 282-310 (1921).

Correction and addition of eighth report on enzyme action. Isolation of enzymes from yeast protein. The activity of the sols as a function of the colloid state. A. Fodor. Fermentforsch. 6, 238 (1922).

Blood saccharase and the antigenic properties of yeast saccharase. E. Knaffl-Lenz. Z. physiol. Chem. 120, 110-25 (1922).

Studies on enzymes. II. H. v. Euler and K. Myrback. Arkiv Kemi Mineral. Geol. 8, No. 22, 31 pp. (1922).

The nature of the zymase-catalyzing substance in yeast sap. H. Haehn and H. Schifferdecker. Biochem. Z. 138, 209-68 (1923).

The fat-splitting enzymes of bacteria. L. Michaelis and Y. Nakahara. Z. Immunitätsforsch. 36, 449-62 (1923).

The reaction of yeast enzymes to high temperatures. S. Akamatsu. Biochem. Z. 137, 364-71 (1923).

The esterification of phosphoric acid by yeast. A. Gottschalk and C. Neuberg. Biochem. Z. 154, 292-4 (1924).

Enzymic degradation and synthesis of carbohydrates. I. Phosphate exchange and glycogen cleavage in muscle and yeast. H. v. Euler, K. Myrback and S. Karlsson. Z. physiol. Chem. 143, 243-64 (1925).

Dried preparations of lactic ferments and blastomycetes. M. Bornand. Schweiz. Apoth. Ztg. 63, 13-5 (1925).

Recent contributions to the subject of enzymic formation and destruction of carbohydrates. H. v. Euler and K. Myrback. Svensk Kem. Tid. 173-84 (1925)(in German).

Enzymic transformations of aldehydes. II. K. Myrback and W. Jacobi. Z. physiol. Chem. 161, 245-53 (1926).

Specificity of the α -glucosidase from yeast. B. Helferich, W. Klein and W. Schäfer. Ber. 59B, 79-86 (1926).

The action of yeast oxidoreductase on some supposed intermediate products of alcoholic fermentation and on crotonaldehyde. A. Lebedev. Z. physiol. Chem. 172, 50-5 (1927).

Studies on the enzyme action of yeast. M. Somogyi. Proc. Soc. Exptl. Biol. Med. 24, 320-1 (1927).

Inactivation of some yeast enzymes by zinc and cadmium salts. S. Kostychev and G. Medvedev. Z. physiol. Chem. 164, 77-102 (1927).

Affinity problems. IV. H. v. Euler. Arkiv Kemi Mineral. Geol. 9, No. 44, 1-6 (1927).

Enzymic specificity. H. v. Euler and K. Josephson. Z. physiol. Chem. 166, 294-317 (1927).

Enzymic transformation of aldehydes. III. H. v. Euler and K. Myrback. Z. physiol. Chem. 165, 28-44 (1927).

Some properties of melibiase. I. R. Weidenhagen. Z. Ver. deut. Zuckerind. 77, Tech. Tl., 696-707 (1927).

The regeneration of sucrase from certain carriers. A. Fodor and C. Epstein. Z. physiol. Chem. 167, 1-16 (1927).

Relation of oxidizing substances in bacteria and yeasts to cellular oxidases. W. Loele. Virchows Arch. path. Anat. 267, 733-45 (1928).

Specificity of the dehydrases. The separation of the citric acid dehydrase from liver and of the lactic acid dehydrase from yeast. F. Bernheim. Biochem. J. 22, 1178-92 (1928).

The preparation of a substance which participates in the enzymic breakdown of glucose to lactic acid (Meyerhof's activator). E. Brunius and S. Proffe. Z. physiol. Chem. 178, 164-8 (1928).

Enzymes and biocatalysts in adaptation and inheritance. I.
Influence on yeast of preliminary treatment in iron-containing media.
H. v. Euler and E. Eriksson. Z. physiol. Chem. 178, 39-51 (1928).

Melibiose. II. R. Weidenhagen. Z. Ver. deut. Zuckerind. 78, Tech. Tl.,
99-110 (1928).

Desmolytic formation of methylglyoxal through yeast enzyme. C.
Neuberg and M. Kobel. Biochem. Z. 203, 463-8 (1928).

Enzymic sucrose cleavage. R. Weidenhagen. Naturwissenschaften 16,
654-5 (1928); Z. Ver. deut. Zuckerind. 78, Tech. Tl., 539-42 (1928).

The mode of action of enzymes or enzyme systems. A. Fodor with
L. Frankenthal and S. Kuk. (Univ. Jerusalem.) Fermentforsch.
10, 274-301 (1928).

The mechanism of enzyme action. III. The relation between enzyme
action and adsorption. F. F. Nord and J. Weichherz. Z. physiol.
Chem. 183, 191-217 (1929).

Further evidence of the desmolytic production of methylglyoxal by
yeast. C. Neuberg and M. Kobel. Biochem. Z. 210, 466-88 (1929).

Affinity problems. V. H. v. Euler and R. Nilsson. Arkiv Kemi Mineral.
Geol. 10A, No. 4, 7 pp. (1929).

The zymatic system of Saccharomyces johannisberg. I. Yamasaki.
Biochem. Z. 228, 127-34 (1930).

Synthesis of a carbon chain by means of enzymes. II. The study of
carboligases. A. Stepanov and A. Kuzin. Ber. 63B, 2473-6 (1930)

Enzymic synthesis of higher dextrans. S. Nishimura. Biochem. Z.
225, 264-6 (1930).

The reaction of yeast enzymes on glyoxylic acid. A. Stepanov and A.
Kuzin. Ber. 63B, 1147-53 (1930).

The multiple nature of the enzyme carrier in polypeptide hydrolysis
by yeast maceration juice. Preparation of protein-free eluates
which act exclusively on polypeptides. A. Fodor and L. Frankenthal.
Biochem. Z. 229, 16-27 (1930).

The specificity and the mechanism of action of sugar-splitting enzymes.
R. Weidenhagen. Fermentforsch. 11, 154-63 (1930).

Specificity of hydratases. Action of peas and yeast on crotonic acid. K. P. Jacobsohn and F. Belo Pereira. Compt. rend. soc. biol. 108, 208-10 (1931).

Comparative studies on the coenzyme of lactic acid formation and of alcoholic fermentation. K. Lohmann. Biochem. Z. 241, 67-86 (1931).

Multiple nature of the enzyme carrier in the polypeptide hydrolysis by yeast maceration juice. II. The activation of dipeptides of glycocoll eluates splitting exclusively higher polypeptides. A. Fodor and L. Frankenthal. Biochem. Z. 233, 283-95 (1931).

Stability of glycolase. C. Neuberg and M. Kobel. Austral. J. Exptl. Biol. Med. Sci. 9, 127-133 (1932).

The new oxidation enzyme. O. Warburg and W. Christian. Naturwissenschaften 20, 980-1 (1932).

A new oxydation enzyme and its absorption spectrum. O. Warburg and W. Christian. Biochem. Z. 254, 438-58 (1932).

The alcohol oxidizing enzyme in yeast. F. Windisch. Naturwissenschaften 20, 673 (1932).

The amide splitting ability of yeast. G. Gorr and J. Wagner. Biochem. Z. 254, 1-4 (1932).

A study of the enzymic transformation of synthetic methylglyoxal to lactic acid. K. Lohmann. Biochem. Z. 254, 332-54 (1932).

Yeast lipase. G. Gorbach and H. Günter. Monatsh. 61, 47-60 (1932).

New observations on β -glucosidase. C. Neuberg and E. Hofmann. Biochem. Z. 256, 450-61 (1932).

The β -glucosidase of lactose yeast. E. Hofmann. Biochem. Z. 256, 462-74 (1932).

The decomposition of lactic acid by yeast enzyme. A. Hahn, E. Fischbach and H. Niemer. Z. Biol. 94, 58-66 (1933).

Lactase in bottom yeast. E. Hofmann. Biochem. Z. 265, 209-12 (1933).

The separate enzymes in the enzymic system of lactose yeast. S. Grzycki. Biochem. Z. 265, 191-4 (1933).

The discontinuity of hydration processes. II. Enzymic action. J. V. Eyre and W. A. Davis. J. Inst. Brewing 39, 103-25 (1933).

Supposed direct spectroscopic observation of the "O-transporting enzyme." D. Keflin. Nature 132, 783 (1933).

Diastase-building bacteria (with special reference to lactic acid bacteria) and yeasts. A. Dull. Zentr. Bakt. Parasitenk., Abt. II, 88, 81-124 (1933).

Yeast asparaginase. W. Grassmann and O. Mayr. Z. physiol. Chem. 214, 185-210 (1933).

The amide-splitting ability of Torula utilis, a study of the dependence of the formation of plant enzymes upon the nitrogenous food. G. Gorr and J. Wagner. Biochem. Z. 266, 96-101 (1933).

The specificity of carbohydrate splitting enzymes. H. Karlström. Teknillinen Likakauslehti 23, 58-66 (1933); Chem. Abstr. 27, 2462 (1933).

Newer aspects of oxidation and reduction enzyme systems. H. v. Euler. Ergeb. Enzymforsch. 3, 135-62 (1934).

Decomposition of lactic acid by yeast enzymes. H. A. Hahn and E. Fischbach. Z. Biol. 95, 155-63 (1934).

The α -glucosidase of yeast. B. Helferich, U. Lampert, and G. Sparmberg. Ber. 67B, 1808-11 (1934).

Activation of enzymic reactions. I. H. v. Euler and T. Svenson. Arkiv Kemi Mineral. Geol. 11B, No. 47, 6 pp. (1934).

Free flavin and bound flavin (flavin-enzyme) in animal organs and liquids and in yeast. H. v. Euler and E. Adler. Arkiv Kemi Mineral. Geol. 11B, No. 28, 6 pp. (1934).

Hydrolysis of α - and β -glycerophosphate by fresh yeast and dissolved yeast enzyme. W. Schuchardt. Biochem. Z. 278, 146-72 (1935).

Studies on the affinity relationship of animal and plant dipeptidases. W. Grassmann, L. Klenk and T. Peters-Mayr. Biochem. Z. 280, 307-24 (1935).

Specific pyrophosphatase. E. Bauer. Naturwissenschaften 23, 866-7 (1935).

Diastatically active yeasts. A. Dull. Z. Spiritusind. 58, 31 (1935)

The activity of the dehydrases in pea seeds. L. Fodor and N. Lichtenstein. Fermentforsch. 14, 413-21 (1935).

Relation between hydrogen ions and origin of different carbohydrases. E. Hofmann. Biochem. Z. 275, 320-7 (1935).

Isolation and properties of indophenoloxidase from yeast cells and heart muscle. S. Yamaguchi, H. Tamiya and Y. Ogura. Acta Phytochim. 9, 103-6 (1936).

Specificity of the galactosidases. R. Weidenhagen and A. Renner. Z. Wirtschaftsgruppe Zuckerind. 86, Tech. Tl., 22-56 (1936).

An improved method for preparing the intermediate enzyme from yeast. E. Negelein and W. Gerischer. Biochem. Z. 284, 289-96 (1936).

Aldolase, a carbon-binding enzyme. I. Aldol condensation of dehydroxyacetone phosphate and acetaldehyde. O. Meyerhof, K. Lohmann and Ph. Schuster. Biochem. Z. 286, 301-18 (1936).

Fermentation enzymes VII. The phosphorylation of hexose by yeast extracts. A. Schaffner. Z. physiol. Chem. 248, 159-73 (1937).

Purification of yellow enzyme from yeast by adsorption. F. Weygand and H. Stocker. Z. physiol. Chem. 247, 167-71 (1937).

Enzymic hydrogenation of unsaturated compounds. F. G. Fischer and W. Robertson. Ann. 529, 87-108 (1937).

Enzymic hydrogenation of dehydrodesoxycholic acid by yeast. C. H. Kim. Enzymologia 4, 119-21 (1937)(in German).

Mannitoldehydrase. D. Müller. Enzymologia 3, 26-8 (1937)(in German).

Preparation of highly active alcohol apodehydrogenase from yeast. M. Sreenivasaya. Nature 139, 112 (1937).

Glycocholate in yeast. K. Takahasi. Enzymologia 3, 261-2 (1937) (in German).

Enzymes of fermentation. VIII. Phosphorylation of glycogen by yeast extracts. A. Schaffner and H. Specht. Z. physiol. Chem. 251, 144-54 (1938).

Enzymic splitting of triphosphoric acid. II. Hydrolysis by means of an enzyme found in Aspergillus niger and yeast. Analytical reactions of triphosphate. C. Neuberg and H. A. Fischer. Enzymologia 2, 241-57 (1938).

The nature of yeast and liver arginase. S. Edlbacher and H. Baur. Naturwissenschaften 26, 268 (1938).

An ammonia-liberating enzyme with optimum activity at pH 3.5. C. Enders and M. Hegendorfer. Naturwissenschaften 26, 104 (1938).

Course of the enzymic oxidation of acetaldehyde in the presence of yeast. K. Heicken. Ann. 534, 68-94 (1938).

Deamination enzyme of yeast (an aspartase effect). H. Leopold. Landw. Jahrb. 85, 534-55 (1938).

Glucuronate and gluconate as donators for yeast. D. Müller Skand. Arch. Physiol. 80, 328-33 (1938).

Yeast enzymes. I. Fermentation. J. L. Melnick and K. G. Stern. Brewers Digest 14, 199-202T, 215-19T (1939).

Preparation and purification of "old" yellow enzyme from yeast and a new method for reversible splitting. F. Weygand and L. Birkofer. Z. physiol. Chem. 261, 172-82 (1939).

Esterase of yeast. C. H. Kim. Enzymologia 6, 183-5 (1939)(in German).

Enzymic hydrogenation of dehydrodesoxycholic acid by yeast. II. C. H. Kim. Enzymologia 6, 105-7 (1939)(in German).

Enzymic splitting of acetals. C. Neuberg and R. Ziffer. Enzymologia 5, 389 (1939)(in German).

The adaptive enzymes of certain strains of yeasts. H. E. Rhoades. J. Bact. 42, 99-114 (1941).

Adaptive enzymes of certain strains of yeast. H. E. Rhoades. Brewers Digest 16, 190-4T, 198T (1941).

Thrombokinase from yeast. Phyt thrombokinase. H. Dyckerhoff, H. Glamser and K. Widmann. Biochem. Z. 314, 250-7 (1942).

Extracts

On yeast extracts. A. Wiebold. Arch. Pharm. 245, 291-311 (1907).

Comparison of beef and yeast extracts of known origin. F. C. Cook. U. S. Dept. Agr. Bur. Chem. Cir. 62 (1910).

Fermentin. A yeast preparation. O. Schmatolla. Pharm. Ztg. 56, 642 (1911).

Stable yeast preparations. A. Stephan. Apoth. Ztg. 26, 754-5, 764-6 (1911).

Yeast maceration juice or yeast extract? A. v. Lebedev. Z. Gärungsphysiol. 4, 236-7 (1914).

The extraction of different preparations of dried yeast. E. Buchner and S. Skraup. Biochem. Z. 82, 107-33 (1917).

Studies on the colloidal state of proteins in yeast extract. I. Yeast juice protein in alkaline solution--relation to biological processes. A. Fodor. Kolloid Z. 27, 58-69 (1920); II. Yeast phosphoprotein in the sol state as a colloidal ferment. Ibid. 29, 28-45 (1921).

Comparative taste tests of meat extract and yeast extract. T. Sabalitschka. Pharm. Ztg. 67, 1061 (1922).

Seasoning powder from mushrooms; seasoning extract and pill mass from yeast. T. Sabalitschka and H. Riesenbergl. Ber. deut. pharm. Ges. 32, 48-55 (1922).

Oenological products and yeast foods. F. and A. Bonis. Ann. fals. 16, 148-53 (1923).

Meat extracts, their substitutes and similar products, especially the presence therein of glutinous substances. K. Beck and W. Schneider. Z. Untersuch. Nahr.-Genussm. 45, 308-36 (1923).

Influence of acidity on the action of yeast extract on concentrated glucose solutions. R. Kuhn and G. E. V. Grundherr. Ber. 57B, 1852-4 (1924).

Yeast preparation (substitute for meat extract). J. Nagai. Pharm. Zentralh. 65, 314-5 (1924).

"Cenomassa zyma". P. Weinreich. Schweiz. Apoth. Ztg. 63, 533-4 (1925).

Yeast extract as a supplement to gelatin. G. A. Hartwell. Biochem. J. 20, 1279-81 (1926).

A new yeast preparation. E. Stern and H. Becker. Chem. Ztg. 50, 185-6 (1926).

The chemical constituents of yeast extract. S. Ohdake. Bull. Agr. Chem. Soc. Japan 3, 98-122 (1927).

Physiological role of vitamin B. IV. Relation of certain dietary factors in yeast to growth of rats on diets rich in proteins.

A. Hassan and J. C. Drummond. *Biochem. J.* 21, 653-61 (1927).

Cenomasse zyma. H. Eschenbrenner. *Pharm. Ztg.* 73, 701-3 (1928).

Yeast extract, a new and satisfactory pill mass excipient. W. Schnellbach. *Am. J. Pharm.* 101, 137-40 (1929).

Comparative tests on the practical application of yeast extract and yeast powder in the preparation of pills and their therapeutic advantages over the usual pill vehicles. H. Lepke. *Suddeut. Apoth. Ztg.* 69, 720-5 (1929); *Chem. Abstr.* 24, 687 (1931).

Yeast products used in the manufacture of drugs. F. Graf. *Pharm. Ztg.* 74, 946-9 (1929).

Comparative studies of meat extracts and vitamin containing yeast extracts with special reference to their biochemical, bacteriological and serological behavior. E. Remy. *Arch. Hyg. Bakt.* 101, 27-38 (1929).

Study of the action of yeast extracts on the constituents of hides. F. Van Welden. *Bull. assoc. élèves inst. sup. ferment. Gand* 32, 27-32, 39-41 (1931); *Chem. Abstr.* 25, 1703 (1931).

The influence of yeast extract upon the saccharification of potato mashes. B. Lampe. *Z. Spiritusind.* 54, 289-90 (1931).

The bromatological constitution and physiological value of yeast extracts and meat extracts. E. Caserio. *Ind. ital. conserve aliment.* 9, 296-300 (1934).

The mechanism of phosphorylation by yeast extracts. A. Schäffner and E. Bauer. *Naturwissenschaften* 22, 464 (1934).

Investigations on yeast extracts in comparison with meat extracts. G. Ricordi. *Ind. ital. conserve aliment.* 10, 73-4 (1935).

Suggested test for distinguishing between meat extract and yeast extract. R. O. Blench. *Chemistry & Industry* 13, 148 (1935).

The effect of some yeast extract factors upon the growth of rats on a high-fat diet. C. Y. Chen. *Nutrition Bull. Coll. Agr. Natl. Univ. Peiping* B2, 43-51 (1935).

Influence of yeast and yeast extracts on intestinal motility. Experiments on the isolated intestine. H. Wastl. *Biochem. Z.* 284, 24-39 (1936).

Extracts of beef, yeast and vegetables and their analytical differentiation. U. Hordh. *Industria y quim.* 1, 99-103 (1936).

Differentiation of the various fractions of protein nitrogen in meat extracts and substitutes. G. Buogo and M. Maitilasso. *Ind. ital. conserve aliment.* 14, 57-8 (1939).

Food extracts of animal and vegetable origin. G. La Parola. *Rend. ist. sanità publ.* 2, 415-26 (1939); *Chem. Abstr.* 36, 5265 (1942).

Yeast extract. G. Bruhns. *Centr. Zuckerind.* 49, 64-5 (1941); *Chem. Abstr.* 35, 3722 (1941).

Yeast extracts, their preparation, investigation and evaluation. H. Diller. *Z. Untersuch. Lebensm.* 83, 206-18 (1942).

Effect of yeast extracts on local anesthetic activity of cocaine. E. S. Cook. *Proc. Soc. Exptl. Biol. Med.* 54, 203-4 (1943).

Factor Z

Acceleration of the fermentive activity of fresh yeast by the biocatalyst Z. H. v. Euler and K. Myrback. *Z. physiol. Chem.* 141, 297-308 (1924).

"Activator Z." IV. A specific acceleration of fresh yeast fermentation. H. v. Euler, E. Brunius and S. Proffe. *Z. physiol. Chem.* 178, 202-8 (1928).

The activator Z and its relation to the growth factor of yeast, bios and the vitamins B. T. Philipson. *Z. physiol. Chem.* 193, 15-45 (1930).

Activators Z. H. v. Euler and T. Philipson. *Z. physiol. Chem.* 195, 81-100 (1931).

The components of activator Z. H. v. Euler and T. Philipson. *Z. physiol. Chem.* 198, 1-8 (1931).

Fermentation activators Z and the growth substances. H. v. Euler and T. Philipson. *Biochem. Z.* 249, 245-56 (1932).

Biocatalysts in germination. H. v. Euler, T. Philipson and D. Burström. *Z. physiol. Chem.* 208, 281-4 (1932).

The mode of action of Euler's Z factor. K. Myrback and H. Larsson. *Biochem. Z.* 258, 118-33 (1933).

The factor Z of von Euler. H. Borchardt and H. Pringsheim. Bull. soc. chim. biol. 16, 736-42 (1934).

Removal of factor Z and of bios-growth substances by yeast. V. Hartelius and N. Nielsen. Biochem. Z. 298, 125-9 (1938).

Plant growth factors. XXX. Yeast growth, fermentation and factor Z action. F. Kogl and W. A. J. Borg. Z. physiol. Chem. 269, 97-134 (1941).

Fat

The active principle of yeast. E. Roos. Pharm. J. 78, 587 (1907).

The fat of yeast. H. A. D. Neville. Biochem. J. 7, 341-8 (1913).

Yeast fat. Th. Bokorny. Allg. Brauer-Hopfen-Ztg. 55, 1803-5 (1915); Chem. Abstr. 10, 798 (1916).

Yeast fat, a new source of fat. A. Welter. Seifenfabr. 35, 845-6 (1915).

The biochemistry of microorganisms. I. S. L. Ivanov. J. Microbiol., Petrograd, 2, 97-103 (1915); Chem. Abstr. 17, 3687 (1923).

Accumulation of fat in plant cells, especially in yeast. Th. Bokorny. Arch. Anat. Physiol., Physiol., 1915, 305-49 (1916).

Experiments on the fat in barm (chiefly brewers' compressed yeast). Th. Bokorny. Biochem. Z. 75, 346-75 (1916).

Yeast fat. O. Neuss. Seifenfabr. 36, 38 (1916).

The formation of fat by yeast. I. S. Maclean and D. Hoffert. Dept. Sci. Ind. Res. Rept. Food Invest. Bd. 1918, 66-8 (1919).

Formation of fat in yeasts on solid media. P. Lindner and T. Unger. Z. tech. Biol. 7, 68-78 (1919).

The nature of yeast fat. I. M. Maclean and E. M. Thomas. Biochem. J. 14, 483-93 (1920).

The nature of yeast fat. O. Hinsberg and E. Roos. Z. physiol. Chem. 111, 304 (1920).

Fat-recovery problems during the war. C. Gränacher. Schweiz. Chem. Ztg. 1921, 151-5, 177-81; Chem. Abstr. 15, 2200-1 (1921).

Remarks on the nature of yeast fat. I. S. Maclean. Z. physiol. Chem. 114, 198-9 (1921).

Microbic fat production with special consideration of Endomyces vernalis. P. Lindner. Chem. Umschau 29, 343-4 (1922).

Biological fat formation and recovery. P. Lindner. Z. angew. Chem. 35, 110-14 (1922).

Conditions influencing the formation of fat by the yeast cell. I. S. Maclean. Biochem. J. 16, 370-9 (1922).

The chemical mechanism of fat formation from sugar. H. Haehn and W. Kinttoff. Chem. Zelle Gewebe 12, 115-56 (1925).

The presence of vitamin A in yeast fat. E. M. Luce and I. S. Maclean. Biochem. J. 19, 47-51 (1925).

The regeneration of fat residues in yeast production. M. A. Bendetzkii. Nauch. Zapiski Sakhar. Prom. 5, 26-7 (1927); Chem. Abstr. 21, 3419 (1927).

Examination of yeast fat for the presence of vitamins A and D before irradiation and of vitamin D after irradiation. E. M. Hume, H. H. Smith and I. S. Maclean. Biochem. J. 22, 27-33 (1928).

The Gram stain. The chemical structure of the fatty acids of yeast, and a study of yeast cells made artificially Gram-positive. J. Schumacher. Centr. Bakt. Parasitenk., Abt. I, 109, 181-92 (1928).

The determination of the fat content of yeast. R. Otto and A. Halter. Chem. Ztg. 54, 98-9 (1930).

Studies on yeast fat. I. G. Weiss. Biochem. Z. 243, 269-73 (1931).

Studies on yeast fat. I. J. Weichherz and R. Merländer. Biochem. Z. 239, 21-7 (1931).

The chemistry of the lipides of yeast. I. The composition of the acetone-soluble fat. M. S. Newman and R. J. Anderson. J. Biol. Chem. 102, 219-28 (1933).

The chemistry of the lipides of yeast. II. The composition of the phospholipides. M. S. Newman and R. J. Anderson. J. Biol. Chem. 102, 229-35 (1933).

The fat and lipid metabolism of yeasts. IV. The process of sterol and fat enrichment in bottom brewers' yeast. M. Sobotka, W. Halden and F. Bilger. Z. physiol. Chem. 234, 1-20 (1935).

The biochemical synthesis of fat from carbohydrate. I. S. Maclean. Ergeb. Enzymforsch. 5, 285-304 (1936).

Squalene as a component of yeast fat. K. Täufel, H. Thaler and H. Schreyegg. Fettchem. Umschau 43, 26-9 (1936).

The chemistry of the lipides of yeast. III. Lecithin and cephalin. L. F. Salisbury and R. J. Anderson. J. Biol. Chem. 112, 541-50 (1936).

Fat of yeast. K. Täufel, H. Thaler and H. Schreyegg. Z. Untersuch. Lebensm. 72, 394-404 (1936).

The phosphatides and fats in brewers' and vinegar yeast. B. Rowald. Oil Soap 20, 151-2 (1943).

Feed, General

Dried yeast as a feeding stuff. O. Kellner. Deut. landw. Presse 37, 584 (1910).

The utilization of dried yeast in the animal organism. W. Voltz. Z. Spiritusind. 33, 588-9 (1910).

Feeding experiments with dried beer yeast. O. R. v. Czadek. Z. landw. Versuchsw. Oesterr. 14, 214-31 (1911).

The use of dried yeast for the preparation of molasses food. O. Fallada. Oesterr-ung. Z. Zuckerind. 40, 709-14 (1912).

The utilization of yeast. F. Hayduck. Brewers J., London, 48, 57-8 (1912).

The utilization of dry yeast by farm animals. W. Voltz, J. Paechtner and A. Baudrexel. Landw. Jahrb. 42, 192-254 (1912).

Compilation (of analytical results) and calculations (therefrom) of the commercial value of boiled yeast intended for feeding purposes. A. Wlokka. Wochschr. Brau. 29, 59-60 (1912).

The feed value of brewed hops, dregs and yeast. W. Voltz, N. Muhr, A. Baumann and W. Drauzburg. Landw. Jahrb. 47, 639-71 (1914).

The utilization by the animal organism of yeast cultivated in solutions of sugar and inorganic salts. W. Volk. Z. Spiritusind. 38, 235 (1915).

Dried yeast as food for farm stock. C. Crowther. Brewers J., London, 51, 286-8 (1915).

Utilization by the animal organism of yeast produced from sucrose and nutritive mineral salts. W. Voltz. Z. Spiritusind. 38, 235-6 (1915).

Manufacture and utilization of fodder yeast (mineral yeast and brewers' yeast). W. Voltz. Z. Spiritusind. 39, 53-4, 64-5 (1916).

The digestibility of dried yeast. C. Crowther and H. E. Woodman. J. Agr. Sci. 8, 448-50 (1917).

Organic feeding stuffs with specific action. E. Abderhalden and H. Schaumann. Pflugers' Arch. ges. Physiol. 172, 1-274 (1918).

Utilization of yeast by the animal organism. Remarks on the work of E. Schill. W. Voltz. Biochem. Z. 93, 101-5 (1919).

The preparation of protein for feeding purposes through yeast production. H. Claassen. Deut. Zuckerind. 46, 94 (1921).

The digestibility and assimilability of the nutritive materials of Endomyces vernalis Ludwig by carnivora and herbivora (ruminants). W. Voltz, W. Dietrich and A. Deutschland. Biochem. Z. 114, 111-28 (1921).

Dried yeast, fish meal, and alkaloid-free lupines. M. Gerlach. Mitt. deut. landw. Ges. 38, 99-100 (1923).

Mass production of yeast for feeding purposes. H. Claassen. Chem. Ztg. 52, 407 (1928).

The fundamental food requirements for the growth of the rat. III. Yeast and yeast fractions as a supplement to synthetic rations. C. Kennedy and L. S. Palmer. J. Biol. Chem. 76, 591-606 (1928).

The biological value of yeast proteins for the rat. E. V. Still and F. C. Koch. Am. J. Physiol. 87, 225-48 (1928).

Vitamins. Physiochemical constants of serum and plasma of animals fed on autoclaved meat with or without yeast. F. Negri. Biochim. terap. sper. 17, 445-60 (1930).

Nitrogen and mineral metabolism in dogs fed with autoclaved meat exclusively or with addition of brewers' yeast. C. Schieron and G. Vianello. *Biochim. terap. sper.* 18, 146-69 (1931).

Biological value of protein in various fodders from the viewpoint of its effect on growth. F. Svoboda. *Věstník Českoslov. Akad. Zeměd.* 8, 747-50 (1932).

The presence and significance of yeasts in ensilage. G. Ruschmann and G. Gräf. *Zentr. Bakt. Parasitenk., Abt. II*, 85, 436-69 (1932).

Yeasts and water-soluble vitamins B: their use in veterinary feeding and clinic. F. Desjacques. *Rev. pathol. comp. hyg. gén.* 32, 391-402, 645-55 (1932).

A new combined process for the industrial utilization of extracted beet slices. M. Yarmolinskiĭ. *Sovet. Sakhar* 1933, No. 10, 42-3; *Chem. Abstr.* 29, 6785 (1935).

Fodder yeast. H. Fink. *Z. Spiritusind.* 59, 373-4, 376 (1936).

The value of dried yeast in animal nutrition. J. Axelsson. *Kungl. Lantbruksakad. Tid.* 80, 161-71 (1941) (English summary).

Preparation of yeast for feeding stuffs. M. van Laer. *Chem. Abstr.* 37, 4494 (1943).

Use of dried yeast as a feeding stuff. H. Fink. *Wochschr. Brau.* 58, 51, 59, 66 (1941).

Effect of heat-stabilization of yeast on its feeding value. K. Nehring and W. Schramm. *Biedermanns Zentr., Abt. B*, 13, 163-79 (1941).

To what extent can fish-meal protein be replaced by yeast protein in animal nutrition? A. Hock. *Wochschr. Brau.* 58, 164-6 (1941).

Brewers' and distillers' by-products and yeast in livestock feeding. G. Leavell. *U. S. Bureau Animal Ind., AHD*, No. 58, 18 pp. (1942).

The use for feeding purposes of the residual yeast from beet-juice distilleries using the diffusion process. M. Duschinsky. *Z. Spiritusind.* 45, 96 (1942).

Fat oxidation in experimental animal diets. D. F. Clausen, R. H. Barnes and G. O. Burr. *Proc. Soc. Exptl. Biol. Med.* 53, 176-8 (1943).

Fermentation, General

Is the succinic acid resulting from alcoholic fermentation to be regarded as formed from the sugars by the action of the yeast?
R. Kunz. Z. Untersuch. Nahr. Genussm. 12, 641 (1906).

Conditions governing the formation of fusel oil and their relation to the production of albuminoids in the yeast. F. Ehrlich. Ber. 40, 1027-47 (1907); Z. Ver. deut. Zuckerind. 57, Tech. Tl., 461-92 (1907).

The influence of alcohol on yeast fermentation. M. Kochmann. Biochem. Z. 16, 391-8 (1909).

The life of yeast after fermentation. E. Kayser and A. Demolon. Compt. rend. 149, 152-4 (1909).

The decomposition of amino acids in yeast fermentation. O. Naubauer and K. Fromherz. Z. physiol. Chem. 70, 326-50 (1911).

Reducing powers of yeast. Hydrogenation of sulfur during alcoholic fermentation. M. A. Chovrenko. Z. physiol. Chem. 80, 253-73 (1912).

Alcoholic fermentation. II. Formation of ethyl alcohol and acetaldehyde by living and dead yeast. S. Kostychev and E. Hubbenet. Z. physiol. Chem. 79, 359-74 (1912).

Influence of organic acids on yeast fermentation. F. Johannessohn. Biochem. Z. 47, 97-117 (1912).

Catalytic action of dead yeast cells on fermentation. E. Moufang. Wochschr. Brau. 30, 113-6 (1913).

The formation of volatile acid in sugar-free wines and nutrient media by pure yeast cultures with air access. R. Meissner. Z. Garungsphysiol. 2, 129-46 (1913).

Introduction to the use of beer yeast with the addition of sulfuric acid. E. Stiasny. Wien. landw. Ztg. 63, 29-30 (1913); Chem. Abstr. 7, 1400 (1913)

Processes in yeast fermentation. C. Neuberg and J. Kerb. Ber. 46, 2225-8 (1913).

Alcoholic fermentation. P. Nottin. Bull. assoc. chim. suc. dist. 31, 956-9 (1914).

Alcoholic fermentation. VII. Utilization of acetaldehyde by yeast under different conditions. S. Kostychev. Z. physiol. Chem. 92, 402-15 (1914).

Phytochemical reductions. VI. Production of n-hexyl alcohol by yeast. C. Neuberg and F. F. Nord. Biochem. Z. 67, 24-7 (1914).

The alcohol content of yeast. G. Foth. Jahrb. Ver. Spiritusfabr. Deutschland. 14, 33 (1914).

Preparation of peptone by decomposition of the cells of beer yeast and the role of this peptone in fermentation. E. Veahute. Bull. sec. sci. acad. roumaine 3, 123-31 (1914).

Influence of the alternating current upon the fermentation by living yeast. E. Hagglund. Biochem. Z. 70, 164-70 (1915).

Acceleration of fermentation (by dead yeast). E. Houfang. Allg. Brauer-Hopfen-Ztg. 55, 605-7 (1915); Chem. Abstr. 9, 2124 (1915).

Top fermentation yeasts. F. Schönfeld. Z. angew. Chem. 29, I, 390 (1916).

The glycerol yield in alcoholic fermentation, including several observations on "fat-yeast" and "albumin yeast." A. Kossowicz. Oesterr. Chem. Ztg. (n.s.) 19, 160 (1916).

Yeast juice. G. Paris. Ann. chim. applicata 7, 210-99 (1917).

Top yeasts. E. Kayser. Compt. rend. 164, 739-41 (1917).

General relationship of aldehydes to alcoholic fermentation. The coenzyme of yeast. C. Neuberg. Biochem. Z. 88, 145-204 (1918).

Activation of living yeast by yeast extract and by organic acids. H. v. Euler. Z. tech. Biol. 7, 155-64 (1919).

Contribution to the natural history of alcoholic fermentation. I. The universal occurrence of yeast and alcohol in nature. P. Lindner. Wochschr. Brau. 37, 1-10 (1920).

Zymase and alcoholic fermentation. J. Gajda. J. physiol. path. gén. 18, 1094-1114 (1920).

Alcoholic fermentation. VIII. Influence of zinc chloride on the alcoholic fermentation of living and killed yeasts. S. Kostychev and L. Frey. Z. physiol. Chem. 111, 126-31 (1920). IX. Influence of cadmium and zinc salts on the yeast enzyme. S. Kostychev and S. Subkova. Ibid. 132-40.

Degeneration and treatment of yeast. R. Heuss. Z. ges. Brauw. (n.s.) 43, 225-7, 233-4, 241-2 (1920).

The influence of the products of fermentation on the decomposition of the protein materials in yeast. N. N. Ivanov. Biochem. Z. 120, 62-80 (1921).

Alterations in a top-yeast grown on a galactose substrate. H. v. Euler, I. Laurin and A. Pettersson. Biochem. Z. 114, 277-91 (1921).

Alcoholic fermentation by means of yeast cells under different conditions. I. Influence of animal charcoal and other adsorbents on the course of fermentation. Formation of acetaldehyde. E. Abderhalden. Fermentforsch. 5, 89-109 (1921); II. Ibid. 110-8; III. Influence of adsorbents on the course of fermentation of different carbohydrates. Ibid. 5, 255-72 (1922); IV. Influence of products obtained from yeast and of other substances on the course of fermentation and the growth of yeast cells. Ibid. 273-96; V. Formation of glycerol consequent to the adsorption of intermediate acetaldehyde by charcoal. E. Abderhalden and S. Glaubach. Ibid. 6, 143-8 (1922); VII. Further comparative studies on the influence of animal charcoal and other materials on the rate of alcoholic fermentation under different conditions. Ibid. 162-71; VIII. Formation of glycerol when the intermediate aldehyde is adsorbed with animal charcoal. E. Abderhalden and W. Stix. Ibid. 6, 345-7 (1923).

Fermentation accelerators. Inouye. Wochschr. Brau. 39, 191-3 (1922).

Efficiency of some common anti-ferments. E. H. Harvey. Am. J. Pharm. 94, 797-801 (1922).

Activators of fermentation. E. Lindberg. Biochem. Z. 132, 110-34 (1922).

Alcoholic fermentation in relation to vital activity of Saccharomyces. A. Costantini. Arch. sci. biol., Naples, 3, 263-78 (1922).

Autofermentation of yeast. H. v. Euler and K. Myrback. Z. physiol. Chem. 129, 195-204 (1923).

Efficiency of some common anti-ferments. II. E. H. Harvey. Am. J. Pharm. 90, 105-8 (1923).

Some observations on yeast fermentation. C. Neuberg. Biochem. Z. 152, 203-6 (1924).

Exchanges between yeast cells and the medium and after alcoholic fermentation. D. Triandafil. Ann. brasserie dist. 22, 296, 311, 334, 345 (1924).

The effect of nitrogen in nitrates on the function of yeast as an alcoholic ferment. A. Fernbach and S. Nicolau. Compt. rend. soc. biol. 90, 1212-4 (1924).

Behavior of α and β -glucose towards yeast and Taka-diaxase. Y. Hattori. J. Biochem., Tokyo, 5, 39-47 (1925).

The regulating organism during fermentation. J. Grüss. Wochschr. Brau. 42, 93-6 (1925).

Fermentation by dried yeast preparations. A. Harden. Biochem. J. 19, 477-83 (1925).

Effect of calcium sulfate on the growth and fermentation of yeast. O. W. Richards. J. Am. Chem. Soc. 47, 1671-6 (1925).

Fermentation with partially poisoned yeast. H. v. Euler and V. Sandberg. Fermentforsch. 8, 232-9 (1925).

Fermentation and growth in dried yeast cells. I. H. v. Euler and C. Bartel. Z. physiol. Chem. 159, 85-92 (1926).

Influence of the fatty acids and their salts on alcoholic fermentation by living yeast. I. Acetic and formic acids and their sodium, potassium and ammonium salts. H. Katagiri. Biochem. J. 20, 427-37 (1926).

Formation of polysaccharides by yeast preparations. H. Naganishi. Biochem. J. 20, 856-64 (1926).

Further comparative studies on the fermentability of free and phosphorus-containing hexoses and a polarimetric demonstration of the combination of these substances with the contents of the yeast cell. C. Neuberg and M. Kobel. Biochem. Z. 179, 451-8 (1926).

Influence of certain colloids upon fermentation. III. Fuller's earth and aeration in alcoholic fermentation. R. Greig-Smith. Proc. Linn. Soc. N. S. Wales 51, 134-6 (1926).

A study of the fermentation products of lactic acid bacteria and yeast. R. Nilsson and E. Sandberg. Biochem. Z. 174, 106-15 (1926).

Fermentation of cellulose and its derivatives. H. B. Speakman. Can. Chem. Met. 10, 229-31 (1926).

Yeast fermentations considered from a biological standpoint. II. Preliminary. The fermentability of glyceraldehyde and dihydroxyacetone by living yeast. H. Haehn and M. Glaubitz. Ber. 60B, 490-3 (1927).

The relation of alcoholic fermentation to the hydrogen ion concentration. VI. E. Hägglund and T. Rosenquist. Biochem. Z. 180, 61-4 (1927).

Action of alcohol on the selective power of yeasts in the fermentation of grape musts. L. Semichon. Colloides. biol. clin. therap. 1, 39 (1927).

Symmetric and asymmetric cleavage of racemic tyrosine by fermentation yeast and the effect upon this of vitamin-like nutritive substrates. F. Ehrlich. Biochem. Z. 182, 245-63 (1927).

Influence of the fatty acids and hydroxy acids and their salts on alcoholic fermentation by living yeast.. II. Propionic, butyric, isobutyric, glycolic, lactic, hydroxyisobutyric, α and β -hydroxybutyric acids and their sodium salts. H. Katagiri. Biochem. J. 21, 494-506 (1927).

Acetaldehyde as an intermediate stage in pentose fermentation by infected yeast. A. Gottschalk. Z. physiol. Chem. 168, 136-45 (1927).

The influence of certain colloids upon fermentation. R. Greig-Smith. Proc. Linn. Soc. N.S. Wales 52, 17-24 (1927).

The influence of variations in atmospheric conditions on the growth and fermenting powers of yeast. H. Zikes and F. Wagner. Centr. Bakt. Parasitenk., Abt. II, 70, 193-202 (1927).

Dry yeast fermentation. T. Sabalitschka and R. Weidlich. Apoth. Ztg. 42, 1011-6 (1927).

The surface of yeast as a factor in fermentation. C. Ranken. J. Inst. Brewing 33, 76-84 (1927).

Studies on the role of phosphorus in the life of yeast and in alcoholic fermentation. E. Elion. Nederland. Tijdschr. Hyg. Microbiol. Serol. 3, 229-40 (1928).

Cell-free fermentation. A. Levedev. Z. physiol. Chem. 173, 89-102 (1928).

The surface of yeast as a factor in fermentation. II. C. Ranken and J. R. Bell. J. Inst. Brewing 34, 265-74 (1928).

Open and closed fermentation vessels. F. W. Windisch. Wochschr. Brau. 45, 547-53 (1928).

Fermentation carbon dioxide. F. Stockhausen and F. Windisch. Wochschr. Brau. 45, 277-81, 289-98, 305-11, 317-24, 329-33 (1928).

Effect of yeast on the glucose-sodium bisulfite and related problems. C. Neuberg. Biochem. Z. 212, 477-89 (1929).

Alcohol fermentation. XVIII. The behavior of yeast toward glyceraldehyde and glyceric acid. S. Kostychev and K. Jegorova. Z. physiol. Chem. 181, 264-80 (1929).

The influence of different amounts of sulfuric acid on the fermenting power of yeast. G. Staiger and M. Glaubitz. Z. Spiritusind. 52, 270-1 (1929).

The fermentation properties of Saccharomyces sake. Y. Nishiwaki. Zentr. Bakt. Parasitenk., Abt. II, 79, 194-204 (1929).

The influence of growth-promoting substances of the nature of vitamin D on yeast cells. H. Lecroix. Centr. Bakt. Parasitenk., Abt. II, 76, 417-28 (1929).

Vat ground yeast and the separation of fermenting wort. F. Windisch. Wochschr. Brau. 46, 308-10 (1929).

Influence of different amounts of sulfuric acid on the fermentative power of yeast. G. Staiger and M. Glaubitz. Brennerei Ztg. 46, 152 (1929); Chem. Abstr. 24, 2542 (1931).

Phosphoric esters in alcoholic fermentation. I. The sequence of the formation of phosphoric esters and carbon dioxide in fermentation by dried yeast. E. Boyland. Biochem. J. 23, 219-29 (1929).

Fermentation and growth in dried yeast cells. II. C. Barthel, H. v. Euler and K. Myrback. Z. physiol. Chem. 183, 237-43 (1929).

The fermentation activity of the first group of the species Saccharomyces (Meyen) Rees. K. Trautwein and J. Wassermann. Biochem. Z. 215, 293-318 (1929).

Activation of yeast by pressure fermentation. C. Schuster. Wochschr. Brau. 46, 99 (1929).

The relation between the production of lactic acid and the growth of yeast. E. Aubel. Compt. rend. 188, 578-80 (1929).

Influence of catalytic elements on alcoholic fermentation. II. M. Rozenblatt and A. March. Biochem. Z. 226, 404-14 (1930).

Fermentation by yeast preparations. A. Harden and M. G. MacFarlane. Biochem. J. 24, 343-9 (1930).

Formation of acids during fermentation. W. Windisch, P. Kolbach and R. Illides. Wochschr. Brau. 47, 417-21, 427-31, 437-41 (1930).

Alcohol fermentation. XX. The action of poisons on living yeast, dried yeast and maceration juice. S. Kostychev and V. Berg. Z. physiol. Chem. 188, 133-59 (1930).

Behavior of methylbenzoylcarbinol with fermenting yeast. F. V. Falkenhausen. Biochem. Z. 219, 241-7 (1930).

Influence of the reaction products of fermentation on the velocity of multiplication of yeast cells. L. Casale. Ann. chim. applicata 20, 353-7 (1930).

Phosphoric esters in alcoholic fermentation. II. Pyrophosphate in yeast preparations. E. Boyland. Biochem. J. 24, 350-4 (1930).

Osmosis and fermentation. I. N. C. Beetlestone. J. Inst. Brewing 36, 483-93 (1930).

Phosphoric esters in alcoholic fermentation. IV. Oxidation-reduction potentials of yeast preparations. E. Boyland. Biochem. J. 24, 703-10 (1930).

Fermentation phenomena of the Nymphaea cocci and their relation to yeast. J. Gruss. Wochschr. Brau. 47, 473-5 (1930).

The viability of yeasts in sucrose solutions. F. W. Tanner and W. Burrows. J. Bact. 21, 32-3 (1931).

Specific activators for enzymic decomposition of sugar. H. v. Euler and R. Nilsson. Arkiv Kemi Mineral. Geol. 10B, No. 14, 1-6 (1931).

Yeast fermentation. A consideration of the truth of the Arndt-Schulz rule. H. Dannenberg. Klin. Wochschr. 10, 211-21 (1931).

Significance of nitrates in brewing liquor in relation to fermentation. W. Windisch and F. Windisch. Wochschr. Brau 48, 106-12 (1931).

Alcoholic fermentation. XXI. The temperature constant and temperature coefficient of the fermentation of press juice and of maceration juice. S. Kostychev and G. Medvedev. Z. physiol. Chem. 197, 213-8 (1931).

Is fermentation affected by electric currents? F. Stockhausen and R. Koch. Wochschr. Brau 48, 403-7, 419-23 (1931).

Distilled spirit from kaoliang. Hsin-Fang Fang, Ying-Chuan Sun and Pei-Sung Chin. Golden Sea Res. Inst. Chem. Bull. 3, 158 pp. (1932); Chem. Abstr. 29, 4127 (1935).

Adventitious versus pure yeast fermentation. G. L. Tumang. Sugar News 13, 276-7 (1932).

Alcoholic fermentation. Initial stages of fermentation. Fermentation in the yeast cell. A. Harden. Ergeb. Enzymforsch. 1, 113-28 (1932).

The action of ultraviolet rays on alcoholic fermentation by Saccharomyces cerevisiae. I and II. V. Gronchi. Boll. soc. ital. biol. sper. 7, 957-60, 960-3 (1932).

The importance of oxygen for yeast and for its biochemical functions. F. Windisch. Biochem. Z. 246, 332-82 (1932).

A vegetable extract for the purpose of appreciably increasing the fermentative power of yeast. T. DeVita. Atti Congr. intern. panificazione (Rome 1932) 1, 288-90 (1933).

Formation of phosphoglyceric acid from galactose and hydrolysis of phosphoglyceric acid by galactose yeast. C. Cattaneo. Biochem. Z. 267, 456-9 (1933).

Relation among alcohol fermentation, yeasts and fermentation temperature. III. R. Nakazawa, Y. Takeda and M. Ashikaga. J. Agr. Chem. Soc. Japan 9, 260-72 (1933).

Amylo process and its improvements. A. Boidin. Ind. Eng. Chem. 25, 712-13 (1933).

Synthesis of aniline by yeast in alcoholic fermentation. C. Fromageot and P. Desnuelle. Bull. soc. chim. 53, 541-7 (1933).

Utilization of marine algae for preparation of yeast and alcohol. G. K. Burgvits. Bull. Acad. Sci. USSR, math. nat., 1933, 837-46 (847-8 in German) (1933).

Lactic fermentation. E. Aubel and E. Simon. Compt. rend. soc. biol. 114, 905-7 (1933).

Purification of yeast in the process of alcohol manufacture. A. Sitnikov, A. Vetsesol, R. Segal and O. Silishchenskaya. Brodil'naya Prom. 11 No. 5, 17-21 (1934?); Chem. Abstr. 31, 7591, (1937).

Mechanism of the fermentation of dihydroxyacetone. H. Lehmann. Biochem. Z. 277, 261-7 (1935).

Substances which can stop alcoholic fermentation. L. Genevois. Ann. Ferment. 1, 86-100 (1935).

The effect of oxygen tension on the gas exchange of yeast. Fermentation proper in yeast. L. Plantefol. Ann. physiol. physicochim. biol. 11, 243-61 (1935).

Reversible reactions in biological sugar decomposition. O. Meyerhof. Naturwissenschaften 23, 490-3 (1935).

Possibilities of the growth of microorganisms in unfavorable media. G. Ducellier. Bull. assoc. chim. 52, 201-111 (1935).

Mechanism of oxidation processes. XLI. Further experiments on the dehydrogenation of alcohol by yeast. H. Wieland and F. Wills. Ann. 515, 260-72 (1935).

The occurrence of a fermentation-inhibiting substance in yeast cells. H. v. Euler, E. Adler and G. Dahlgren. Z. physiol. Chem. 236, 119-30 (1935).

Effect of preservatives on fermentation and viability of sugar-tolerant yeasts. A. G. Lockhead and L. Farrell. Food Res. 1, 517-24 (1936).

Yeast alcoholic fermentation balance. R. Guillemet and C. Schell. Compt. rend. soc. biol. 121, 465-7 (1936).

Yeast alcoholic-fermentation balance. R. Guillemet. Bull. soc. chim. biol. 18, 941-58 (1936).

ALCOHOLIC FERMENTATION

and the disorganized zymase system. I. N. S. *Biochem. Z.* 286, 254-78 (1936).

Influence of certain dyestuffs on fermentation and respiration of yeast extract. L. Michaelis and C. V. Smythe. *J. Biol. Chem.* 113, 717-34 (1936).

The reducing power of living yeast during alcoholic fermentation. C. Fromageot and G. Bost. *Enzymologia* 2, 73-8 (1937)(in French).

The reducing power of living yeast in the course of alcoholic fermentation. C. Fromageot and G. Bost. *Compt. rend.*, 204, 1008-10 (1937).

Fermentation methods in the distillery. Recovery of yeast. F. Boinot. *Bull. assoc. chim.* 55, 373-87 (1938).

Maceration extracts of bakers' yeast. F. Lipmann. *Compt. rend. trav. lab. Carlsberg., chim.*, 22, 317-20 (1938)(in German).

Factors affecting the fermentation rate of yeast. C. N. Frey, A. Schultz and L. Atkin. *Intern. Congr. Microbiol. Rept. Proc.* (N.Y. 1939) 3, 743-5 (1940)(in English).

Fermentative powers of commercial yeasts. M. E. Allesandrini. *Rend. ist. sanità publ.* 2, 201-6 (1939); *Chem. Abstr.* 34, 3874 (1940).

Formation and disappearance of volatile acids during anaerobic alcoholic fermentation. E. Peynaud. *Ann. ferment.* 5, 321-37, 385-401 (1939-40).

The effect of aeration on fermentation. K. R. Butlin and W. H. D. Wince. *Chemistry & Industry* 18, 41-2 (1940).

The influence of "ice-water" and distilled water on the activity of yeast. A. V. Faleev. *Bull. biol. med. exptl. U.R.S.S.* 9, 246-8 (1940).

Testing of the separation method of fermentation with the return of the yeast to production. M. A. Vishnyakov and A. I. Malkov. *Lesokhim. Prom.* 3, No. 9, 54-9 (1940); *Chem. Abstr.* 37, 3876 (1943).

A factor promoting lactic acid fermentation. A. F. Virtanen, H. Karstrom, J. Jorma and L. Kahra. *Z. physiol. Chem.* 269, 259-67 (1941).

Inhibition of fermentation by yeast maceration juice. R. Marcuse. *Science (n.s.)* 94, 466-7 (1941).

The mechanism of the Pasteur effect in alcoholic fermentation by yeast cells. A. Gottschalk. Austral. J. Exptl. Biol. Med. Sci. 19, 211-29 (1941).

The liberation of nitrogenous organic substance during the growth of yeast and other microorganisms. H. Claassen. Z. Spiritusind. 64, 54-6 (1941).

The pronounced effect of the value of the ratio of yeast to fermentation mixture on the fermentation by dried brewers' bottom yeast. T. Sabalitschka. Biochem. Z. 311, 55-60 (1942).

Continuous fermentation. G. DeBecze and M. Rosenblatt. Am. Brewer 76, No. 2, 11-16, 30, 32, 34 (1943).

Flocculation and Granulation

Flocculent and powdery forms of yeast: their causes. F. Schönfeld and H. Krumhaar. Wochschr. Brau. 35, 302-4, 342-3 (1918).

Investigation into the settling caused by sudden cooling of fermenting yeast or yeast which had already fermented. H. Mill. Z. ges. Brauw. (n.s.) 43, 49-51, 57-8 (1920).

Studies of the flocculating yeasts. G. Staiger. Z. Spiritusind. 43, 327-8 (1920) (Author's abstract of thesis).

Break of yeasts. H. Lüers and R. Heuss. Z. ges. Brauw. (n.s.) 44, 18-22 (1921).

The flocculation of yeast. H. Lüers and K. Geys. Kolloid Z. 30, 372-6 (1922).

Flocculation of yeast and the effect of pure cultures. K. Geys. Z. ges. Brauw. (n.s.) 45, 51-3, 57-60 (1922).

Electric charges on yeast and hydrogen ion concentration and their influence on attenuation and flocculation. F. Stockhausen. Wochschr. Brau. 44, 121-4, 132-8 (1927).

Observations regarding the flocculation point of brewers yeast. R. Koch. Wochschr. Brau. 45, 175-78, 187-92, 201-6 (1928).

Floppy and grainy compressed yeast. G. Staiger and M. Glaubitz. Brennerei Ztg. 49, 146-7 (1932); Chem. Abstr. 27, 2756 (1933).

Substances in brewers' yeast causing flocculation and break. F. Stockhausen and K. Silbereisen. Wochschr. Brau. 50, 349-51, 357-62 365-8 (1933).

The flocculation of yeasts. P. Petit. Brasserie et malterie 24, 258-62 (1934).

Granulation of compressed yeast. R. Illies. Z. Spiritusind. 59, 270 (1936).

Agglutination of bakers' yeast by Lactococcus agglutinans. E. A. Plevako and O. A. Bakushinskaya. Zentr. Bakt. Parasitenk., Abt. II, 94, 64-77 (1936).

Granulation of pressed yeast. R. Illies. Z. Spiritusind. 59, 117-8 (1936); IV. Ibid. 60, 1-2, 4, 10-11 (1937).

Yeast flocculation. J. A. Burns. J. Inst. Brewing 43, 31-43 (1937).

The rate of subsidence of yeast. N. Nielsen. Compt. rend. trav. lab. Carlsberg, physiol., 22, 61-86 (1937).

The electrical charge of yeast and its importance in agglutination (break). K. Silbereisen. Wochschr. Brau. 55, 153-60, 161-6, 171-6 (1938).

Action of bakers' yeast on d-talose. H. S. Isbell. J. Res. Natl. Bur. Standards 22, 403-5 (1939).

Food, General

Yeast as a food. H. Serger. Pharm. Ztg. 58, 256-7 (1913).

New feedingstuffs used in Germany during the war. M. Kling. Landw. Jahrb. Bayern 6, 483-513 (1916); Mo. Bull. Agr. Intell. 8, 892-9 (1917).

The use of yeast in diet. H. Salomon. Munch. med. Wochschr. 63, 445 (1916).

Yeast as a foodstuff. P. Petit. Brasserie et malterie 7, 257-60 (1917); Chem. Abstr. 12, 1089 (1918).

Food preparation from blood and from viscera by means of yeast. A. Gauducheau. Compt. rend. 166, 1058-9 (1918).

The nutritive value of yeast in bread. P.B. Hawk, C. A. Smith and O. Bergeim. *Am. J. Physiol.* 56, 33-9 (1921).

Studies in inorganic metabolism. III. The influence of yeast and butter fat upon calcium assimilation. L. J. Bogert and R. K. Trail. *J. Biol. Chem.* 54, 387-97 (1922); IV. The influence of yeast and butter fat upon magnesium and phosphorus assimilation. *Ibid.* 753-61.

Studies on yeast. VII. The dietary properties of yeast. V. E. Nelson, V. G. Heller and E. I. Fulmer. *J. Biol. Chem.* 57, 415-24 (1923).

"Fat yeast," Endomyces vernalis, Ludw., as a source of fat for foods and technical purposes. G. H. Nadson and H. G. Konokotina. *Wochschr. Brau.* 41, 249-51 (1924).

Whole and skimmed milk powders as food. L. T. Anderegg and V. E. Nelson. *Ind. Eng. Chem.* 17, 451-5 (1925).

Vitamin R. F. Hering. *Z. med. Chem.* 4, 56-7 (1926); *Chem. Abstr.* 21, 3934 (1927).

The relative efficacy of yeast used externally and internally. E. Petzold. *Am. Med.* 32, 253-5 (1926).

Foodstuffs from yeasts. S. Smith. *Food Manuf.* 1, 118 (1927).

Bile salt metabolism. II. Influence of meat and meat extractives, liver and kidney, egg yolk and yeast in the diet. H. P. Smith and G. H. Whipple. *J. Biol. Chem.* 80, 671-84 (1928).

Protein and vitamin B. G. A. Hartwell. *Biochem. J.* 22, 1212-20 (1928).

A biochemical study of yeast candy. C. F. Poe and H. A. Fehlmann. *Univ. Colo. Stud.* 18, 197-9 (1929).

Experimental investigations on the effect of yeast on the chemical composition of muscle and liver during chronic training and during a single performance. C. Pi-Suñer Bayo and G. Liss. *Z. physiol. Chem.* 193, 193-7 (1930).

Metabolism of women during the reproductive cycle. III. Calcium, phosphorus and nitrogen utilization in lactation and after supplementing the usual home diets with cod-liver oil and yeast. I. G. Macy, H. A. Hunscher, S. S. McCosh and B. Nims. *J. Biol. Chem.* 86, 59-74 (1930).

Additional investigations on the effect of feeding with yeast on the nutrition of muscle and liver during exercise. G. Liss, C. Piñer Bayo and T. Osuka. *Z. ges. exptl. Med.* 74, 750 (1930).

Demonstration of specific antibodies, in vitro in several allergy to fish and yeast. K. Jaffé. *Klin. Wochschr.* 10, 304-6 (1931).

The regulating effect of yeast on the one-sided nutrition of rats. T. Osuka. *Biochem. Z.* 239, 163-71 (1931).

Human milk studies. VI. Vitamin potency as influenced by supplementing the maternal diet with yeast. S. S. McCosh, I. G. Macy and H. A. Hunscher. *J. Biol. Chem.* 90, 1-13 (1931).

The effect of yeast on liver glycogen in different modes of nutrition. H. Aida. *Biochem. Z.* 244, 431-4 (1932).

The variability of the need of the vitamin B complex. A de Vries and G. J. Puister. *Arch. néerland. physiol.* 18, 71-8 (1933).

Value of yeast bread. Y. Vargas Eyre. *J. Soc. Chem. Ind.* 52, 406-9T (1933).

Improving milk products by yeast cultures. O. Laxa. *Mlékařské Listy* 26 339-40 (1934); *Chem. Abstr.* 30, 7232 (1936).

Biochemical study of added yeast content of candies. C. F. Poe and H. V. Goure. *Univ. Colo. Stud.* 21, 93-9 (1934).

The effect of linoleic acid and yeast upon the growth of rats on high-fat diet. Y. Sahashi. *Sci. Pap. Inst. Phys. Chem. Res., Toyko*, 23, 264-9 (1934).

Human milk studies. XII. Vitamin B and vitamin G contents before and during maternal consumption of yeast. E. Donelson and I. G. Macy. *J. Nutrition* 7, 231-4 (1934).

Recent advances in nutrition. E. V. McCollum. *Penna. Med. J.* 39, 61-5 (1935).

Studies on the dietary requirements for lactation. V. Presence of a second lactation factor in yeast. W. Nakahara, F. Inukai, S. Kato and S. Ugami. *Sci. Pap. Inst. Phys. Chem. Res., Tokyo*, 29, 47-52 (1936)

Study of the dietary factors concerned in nutritional muscular dystrophy. S. Morgulis and H. C. Spencer. *J. Nutrition* 11, 573-91 (1936).

A new essential dietary factor. C. A. Elvehjem, C. J. Koehn, Jr. and J. J. Oleson. J. Biol. Chem. 115, 707-19 (1936).

Studies on the extracts of yeast and meat. A. Pugliese and A. S. Clerici. Quaderni Nutriz. 3, 93-121 (1936).

Growth of rats on lactoflavin-free diets. H. v. Euler and M. Malmberg. Z. physiol. Chem. 250, 158-60 (1937).

Improved growth in rats on iodine-deficient diets. R. E. Remington. J. Nutrition 13, 223-33 (1937).

The water-soluble B vitamins. VIII. Essential dietary factors for the rat present in autoclaved yeast extracts in addition to lactoflavin. C. E. Edgar and T. F. Macrae. Biochem. J. 31, 886-92 (1937).

Dietary requirements for lactation. VI. Factor L₂, a second lactation factor present in yeast. W. Nakahara, F. Inukai and S. Ugami. Sci. Pap. Inst. Phys. Chem. Res., Tokyo, 31, 42-54 (1937).

The vitamin B₁ content of human milk and the influence of diet. W. Neuweiler. Klin. Wochschr. 17, 296-8 (1938).

Yeast as a source of vitamin in food for human beings. D. Gaede. Umschau 43, 1015-6 (1939).

Food value of different types of yeast. F. Just. Wochschr. Brau. 57, 233 (1940).

For the supplementing of nutrition. Alter. Munch. med. Wochschr. 88, 193-4 (1941).

The constituents of yeast and their importance in human nutrition. M. Winckel. Z. Volksernahr. 16, 32-4 (1941); Chem. Abstr. 37, 6299 (1943).

Golden sirup with vitamin B, a preparation from yeast. H. D. Sen and J. P. Shukla. Indian Sugar 4, No. 9, 25-6 (1941); Chem. Abstr. 36, 2751 (1942).

Value of microorganisms in nutrition (food yeast). A. C. Thaysen. Nature 151, 406-8 (1943).

Albumin and vitamin. M. Winckel. Z. Volksernahr. 17, 4-6 (1942); Chem. Abstr. 37, 3479 (1943).

The value of cultured yeast in human nutrition. V. The pure protein content of yeast. K. Dirr and P. Decker. Biochem. Z. 316, 245-8 (1943).

Adequacy of the industrial lunch and the use of brewers' yeast as a supplement. C. A. Heller, C. M. McCay and C. B. Lyon. J. Nutrition 26, 385-90 (1943).

Vitamin rich food made from by-product yeast. L. V. Burton. Food Industries 15, No. 11, 66-69, 144 (1943).

How Sweden produces yeast for nutritional purposes. O. Rosenquist. Food Industries 16, No. 6, 74-75, 118 (1944).

Yeast in nutrition. F. A. Wilson. Intern. Sugar J. 46, 154-6 (1944).

General

Yeast. F. L. Ward. Bakers' helper 22, 1134 (1908)

Yeast. Ruling in Austria. Z. öffentl. Chem. 16, 342 (1910)

Propagating value of yeast. Anon. Pure Products. 6, 608-13 (1910).

The chemistry of yeast. P. Schulze. Wochschr. Brau. 29, 501-3, 521-2, 544-8 (1912).

Some facts concerning yeast. Th. Bokorny. Allg. Brauer-Hopfen-Ztg. 55, 1653-4 (1915).

Plastic masses from yeast. H. Blücher. Chem. Ztg. 39, 934 (1915).

History of the knowledge of the source of nitrogen in yeast. E. Donath. Chem. Ztg. 40, 716 (1916).

Contribution to the knowledge of yeast. J. J. van Hest. Wochschr. Brau. 34, 327-8, 341-3 (1917).

The use of microorganisms in chemical industry. E. G. Genoud. Chem. Met. Eng. 19, 616 -7 (1918).

Yeast mycelium for prolonging the viability of the meningococcus. F. Eberson. J. Am. Med. Assoc. 72, 852-3 (1919).

Yeast as it occurs in nature. A. Jørgensen. J. Inst. Brewing 25, 353-5 (1919).

Comparison of azotobacter with yeasts. M. Mulvania. Agr. Exptl. Sta. Univ. Tenn. Bull. 122, 1-6 (1919).

Simple everyday science about yeast. L. K. Hirschberg. Med. Rec. 98, 732-3 (1920).

The yeast industry in 1919. K. Schweizer. Schweiz. Chem. Ztg. 1920, 565-71 (1920); Chem. Abstr. 15, 1185 (1921).

The yeast industry in 1920. K. Schweizer. Schweiz. Chem. Ztg. 1921, 471-4, 499-500 (1921); Chem. Abstr. 16, 310 (1922).

Recent advances in science - biochemistry. J. C. Drummond. Science Progress 17, 205-8 (1922).

Development and nutrition of yeast. A. Tait and L. Fletcher. J. Inst. Brewing 28, 597-618 (1922).

Bakers' yeast as a medicament. M. Barsickow. Pharm. Ztg. 68, 49 (1923).

Clarification of yeast solutions with neutral lead acetate. F. W. Reynolds. Ind. Eng. Chem. 16, 562 (1924).

The industries which utilize yeast. C. Schweizer. Chimie & industrie 12, 623-37 (1924).

Latest investigations in yeast and fermentation. E. Bauer. Am. Food J. 20, 351-3 (1925).

Yeasts. A. Chaston Chapman. Ann. Rept. Smiths. Inst. 1925, 297-312 (1926).

Colloidal gold and an organic compound of gold obtained by biochemical means. G. Rimini. Gazz. chim. ital. 56, 161-4 (1926).

Development and nutrition of yeast. III. A. Tait and L. Fletcher. J. Inst. Brewing 32, 385-414 (1926); Ibid. 29, 509 (1923).

Chemical technology of yeasts. R. Steenhoff. Svensk Kem. Tid. 39, 19-29 (1927).

Modern pill preparation. W. Schöniger. Pharm. Ztg. 72, 470-1 (1927).

Investigation on the origin of yeasts. J. Grüss. Wochschr. Brau. 45, 341-4, 353-7 (1928).

Yeast as a medicament. W. Fischer. Schweiz. Apoth. Ztg. 66, 343-4 (1928)(Abstract of thesis).

Medicinal yeast and yeast food. R. Rapp. "Suddeut. Apoth. Ztg. 69, 548-50 (1929); Chem. Abstr. 24, 203 (1931).

Misuse of the term "medicinal" yeast. T. Sabalitschka. Pharm. Ztg. 74, 1434-5 (1929).

Medicinal yeasts and Faex medicinalis. D. A. - B. 6. A. v. Lingelsheim. Pharm. Ztg. 74, 1569-70 (1929).

The occurrence of yeast in the soil. W. Nissen. Milchwirtschaft. Forsch. 10, 30-67 (1930).

History and development of the modern yeast industry. C. N. Frey. Ind. Eng. Chem. 22, 1154-62 (1930).

Research work in the yeast field. L. H. Lampitt. J. Inst. Brewing 36, 250-60 (1930).

Edible yeasts and their uses. R. V. Givartovskii. Izvest. Tzentral. Nauch. Issledov. Inst. Pisch. Vkusovoi Prom. S.S.S.R. 1930, 22 pp (?); Chem. Abstr. 28, 231 (1934).

Influence of physical and physico-chemical factors on microorganisms (yeasts and bacteria). R. Sterckx. Bull. assoc. élèves inst. sup. ferment. Gand. 36, 279-88 (1935); 37, 21-4 (1936); Chem. Abstr. 30, 3017 (1936).

The effect of short and ultrashort Hertzian waves on enzymes and ferments. P. Liebesny, H. Wertheim and W. Pollak. Bull. assoc. chim. 53, 464-76 (1936).

Yeast. Physiology, manufacture and uses. C. N. Frey, G. W. Kirby and A. Schultz. Ind. Eng. Chem. 28, 879-84 (1936).

Studies on yeast. J. da Veiga Formiga. Rev. chim. ind. 6, 414-19, 467-9 (1937); Chem. Abstr. 32, 3549 (1938).

Yeast in nourishment and therapy. H. Müller. Schweiz. med. Wochschr. 68, 1349-52 (1938).

The biochemistry of yeast. E. I. Fulmer. Ann. Rev. Biochem. 8, 611-26 (1939).

Longevity of yeast. L. Fletcher and T. Manson. J. Inst. Brewing 45, 96 (1939).

Yeast propagation in the modern brewery. E. J. Pyler and T. P. Kruzic. Brewers Digest 14, 25-7T (1939).

Yeast. J. G. Maltby. Chem. Products 2, 131-4 (1939).

The nature of yeast. J. S. Wallerstein and A. L. Schade. Wallerstein Labs. Commun. 3, 91-105 (1940); II. Their origin and relation to other organisms. Ibid. 182-98.

Toxicity and reproduction of yeast. E. V. Eastcott. Can. Chem. Process Inds. 25, 308-13 (1941).

The importance of growth factors in the propagation of yeast. V. Stuchlik. Chem. Obzor 17, 1-6, 25-31 (1942); Chem. Abstr. 37, 4528 (1943).

Evaluation of yeast. E. Knobloch and J. Pine. Chem. Abstr. 37, 4529 (1943).

The effect of ultrasonic waves on yeast. H. v. Euler and B. Skarzynski. Naturwissenschaften 31, 389 (1943).

Some trends in research on yeasts. W. J. Nickerson. Chronica Bot. 7, 409-12 (1943).

Glutathione

Glutathione: a reinvestigation. F. G. Hopkins. J. Biol. Chem. 84, 269-320 (1929).

Behavior of glutathione in yeast. N. U. Meldrum. Biochem. J. 24, 1421-7 (1930).

Preparation of glutathione from yeast and liver. N. W. Pirie. Biochem. J. 24, 51-4 (1930).

A crystalline copper compound of oxidized yeast glutathione. A. Kozlowski. Biochem. Z. 242, 249-5 (1931); Ibid. 241, 403-6 (1931)

Determination of glutathione by a colorimetric method. R. Fleming. Compt. rend. soc. biol. 106, 259-60 (1931).

Extraction of glutathione from beer yeast. M. T. Régner. Compt. rend. soc. biol. 112, 526-8 (1933).

- Glutathione and irradiated beer yeast. C. T. Baumann and J. Deschwanden. Mitt. Lebensm. Hyg. 24, 281-302 (1933).
- Isolation of glutathione from yeast. A. Kozlowski. Science (n.s.) 79, 388-9 (1934).
- Determination of glutathione in yeast. G. Weller. Ann. ferment. 1, 108-4 (1935).
- Determination of glutathione content of dry yeasts used in medicine. T. Sabalitschka. Mikrochemie Festschr. Hans Molisch 1936, 387-92 (1936).
- The role of glutathione in the metabolism of yeast. S. Machlis and K. C. Blanchard. J. Cellular Comp. Physiol. 9, 207-16 (1937).
- Occurrence of glutathione in microorganisms, T. E. Miller and R. W. Stone. J. Bact. 36, 248-9 (1938).
- Glutathione VI. Effect of heat on yeast glutathione. M. Ogawa. J. Agr. Chem. Soc. Japan 14, 1426-32 (1938); VII. Amount present in commercial yeast preparations. Ibid. 1507-11.
- Glutathione and alcoholic fermentation. Glutathione in yeasts. P. Bolorney. Ann. ferment. 5, 221-33 (1939).
- A simplified method for the isolation of glutathione from yeast. E. F. Schroeder, V. Collier Jr., and G. E. Woodward. Biochem. J. 33, 1180 (1939).
- Whole-grain bread. Increasing its biological value. N. C. Kyriacou. Ernährung 5, 231-2 (1940).
- Relationship between the glutathione content and the quality of yeasts. A. E. Shakhnovich-Smirnova. Mikrobiologiya 10, 542-8 (1941).
- The amount and changes of glutathione in pressed yeast sedimented under various conditions. N. I. Proskuryakov. Khlebopekarnaya Prom. 1940, No. 1, 3-5 (1940); Chem. Abstr. 38, 5358 (1944).

Glycogen

Amount of glycogen in differently-fed cultures. W. Henneberg. Biedermanns Zentr. 40, 277-8 (1911).

The preparation of glycogen and yeast-gum from yeast. A. Harden and W. Young. J. Chem. Soc. 101, 1928-30 (1912).

The formation of glycogen by yeast cells. D. Brüschi. Rend. accad. Lincei, fis. mat. nat., (5) 21, I. Sem., 54-6 (1912).

Determination of glycogen in yeast. F. Schönfeld and E. Kunzel. Wochschr. Brau. 31, 9-12 (1914).

Estimation of glycogen in yeast. E. Salkowski. Z. physiol. Chem. 92, 75-84 (1914).

Simultaneous change in the content of glycogen, nitrogen and enzyme in the living yeast. S. Kullberg. Z. physiol. Chem. 92, 340-59 (1914).

Remarks on the work of Kullberg: "The simultaneous change in the content of glycogen, nitrogen and enzyme in yeast." E. Salkowski. Z. physiol. Chem. 93, 336-8 (1914).

Method for the quantitative determination of yeast glycogen and the question of the action of alkali on glycogen formation in yeast. P. Mayer. Biochem. Z. 136, 487-97 (1923).

The retention of reserve carbohydrate by the assimilatory and dissimilatory power of yeast. J. Warkany. Biochem. Z. 150, 271-80 (1924).

Studies on glycogen. I. The nature of yeast glycogen, its preparation, estimation, and role in yeast metabolism. A. R. Ling, D. R. Nanji and F. J. Paton. J. Inst. Brewing 31, 316-21 (1925).

The preparation of yeast glycogen. T. Yokoyama. Beitr. Physiol. 3, 95-110 (1925).

Synthesis and fermentation of glycogen by maltase-free yeast. A. Gottschalk. Z. physiol. Chem. 152, 132-5 (1926).

Comparative experiments on the fermentability of zymohexoses, glycogen and starch. J. Leibowitz. Z. physiol. Chem. 173, 84-8 (1928).

Glycogen. II. Preparation of glycogen from yeast, and the identity of glycogen from different sources. K. M. Daoud and A. R. Ling. J. Soc. Chem. Ind. 50, 365-8T (1931); III. Nature of the carbohydrate constituents of the cell membrane of yeast. Ibid. 379-82T.

Glycogen formation in yeast. F. T. Brücke. Biochem. Z. 264, 157-62. (1933).

Yeast glycogen. A. Heiduschka and G. Schäfer. Arch. Pharm. 272, 137-42 (1934).

The importance of "pantothenic acid" in fermentation, respiration and glycogen storage. R. J. Williams, W. A. Mosher and E. Rohrman. Biochem. J. 30, 2036-9 (1936).

Yeast gum and glycogen. F. Stockhausen and K. Silbereisen. Biochem. Z. 287, 276-86 (1936).

Glycogen breakdown in muscle extract and yeast juice. H. Lehmann. Nature 141, 470 (1938).

The reversible enzymic breakdown of glycogen in liver and yeast. D. J. Bell, L. J. Harris, and N. W. Pirie. Ann. Repts. Progress Chem., London, 1939, 361-2 (1940).

Growth and Growth Substances, General

The cultivation of yeast. F. Schönfeld. Z. angew. Chem. 23, 985-6 (1910).

Ethyl acetate as carbon source for yeasts and other budding fungi. H. Will and R. Heuss. Z. ges. Brauw. (n.s.) 33, 128-9 (1912).

The symbiotic life of yeast races. A. J. J. Vandeveld. Orig. Commun. 8th Intern. Congr. Appl. Chem. (N.Y. 1912) 14, 191-202 (1912).

Nourishment of yeast cells. M. Rubner. Sitzber. preuss. Akad. Wiss. 1913, 232-43 (1913).

The velocity and magnitude of yeast growth in wort. T. Carlson. Biochem. Z. 57, 313-34 (1913).

Influence of brew-water on yeast, wort and beer. K. Micksch. Chem. Abstr. 8, 1484 (1914).

Nutrition of yeast with glycerol and other alcohols. T. Bokorny. Allg. Brauer-Hopfen-Ztg. 56, 177-80, 195-6 (1916); Chem. Abstr. 11, 3375 (1917).

Observations on yeast (mostly brewers' pressed yeasts of München). T. Bokorny. Pflüger's Arch. ges. Physiol. 164, 203-73 (1916).

The formation of protein from different sources of carbon. T. Bokorny. Munch. med. Wochschr. 63, 191-2 (1916).

The influence of the addition of unrefined sugar to wort on the biology of yeasts. H. Zikes. Centr. Bakt. Parasitenk., Abt. II, 46, 385-90 (1916)

Some observations on yeast growth. A. Slator. Biochem. J. 12, 248-58 (1913).

Metabolin and antibolin of yeast. E. Vahlen. Z. physiol. Chem. 106, 133-78 (1919).

Influence of substances obtained from yeast on the fermentation of carbohydrates by yeast. E. Abderhalden. Fermentforsch. 3, 44-70 (1919).

Superphosphate as yeast nutriment. G. Ellrodt. Brennerei Ztg. 36, 8239 (1919); Chem. Abstr. 14, 794 (1920).

Yeast growth. L. Eynon. J. Soc. Chem. Ind. 40, 187-8R (1921).

Yeast crops and the factors which determine them. A. Slator. J. Chem. Soc. 119, Trans., 115-31 (1921).

Nutritional factors in the growth of yeast and bacteria. I. Vitamins. L. Freedman and C. Funk. J. Metab. Res. 1, 457-68 (1922).

Yeast and aldehyde. T. Bokorny. Allg. Brauer-Hopfen-Ztg. 62, 1057-60, 1149-50 (1922); Chem. Abstr. 17, 3347 (1923).

Free acid and its influence upon the reproduction of yeast and microbes. M. H. van Loer and J. Merten. Compt. rend. soc. biol. 87, 290-2 (1922).

The rate of formation and the yield of yeast in wort. N. A. Clark. J. physiol. Chem. 26, 42-60 (1922).

Can yeast grow in chemically pure medium? C. Funk and L. Freedman. Proc. Soc. Exptl. Biol. Med. 20, 311-3 (1923).

Studies on yeast. VI. The growth of Saccharomyces cerevisiae in synthetic mediums. E. I. Fulmer and V. E. Nelson. J. Infectious Diseases 33, 130-3 (1923).

Food accessory factors (vitamins) in bacterial growth. Observations on the ultimate source of accessory growth substances for yeast. VII. R. C. Robertson and D. J. Davis. J. Infectious Diseases 32, 153-8 (1923).

The growth of yeast on a medium of wholly synthetic origin. E. I. Fulmer, V. E. Nelson and A. White. J. Biol. Chem. 57, 397-9 (1923).

The growth of yeasts on synthetic agar mediums. E. I. Fulmer and M. Grimes. J. Bact. 8, 585 (1923).

Allelocatalysis and the growth of yeast. G. L. Peskett. Biochem. J. 18, 866-71 (1924).

Limitation to the development of microorganisms in artificial mediums. A. Berdnikow. Compt. rend. soc. biol. 90, 1305-6 (1924).

Continuous reproduction of microorganisms in synthetic media. C. H. Werkman. Science (n.s.) 62, 115-6 (1925).

The influence of sugar on the growth and development of yeast. G. A. Nadson and V. H. Zelenekkaja. Wochschr. Brau. 42, 133-4 (1925).

Multiplication of yeasts in solutions of purified nutrients. M. B. MacDonald. Am. J. Hyg. 5, 622-34 (1925).

Calcium need of algae and yeasts. O. Loew. Biol. Zentr. 45, 122-4 (1925).

Effect of temperature upon the growth of yeast in various media. F. F. Sherwood and E. I. Fulmer. J. Phys. Chem. 30, 738-56 (1926).

Growth of yeast in wort. O. Ludwig. Biochem. Z. 167, 384-94 (1926).

The multiplication of yeasts and yeast-like fungi in synthetic nutrient solutions. F. W. Tanner, E. D. Devereux and F. M. Higgins. J. Bact. 11, 45-64 (1926).

Several observations on the growth-stimulating action of yeast extract for Saccharomyces sake. R. Takada. J. Soc. Chem. Ind. Japan 29, 358-63, suppl. binding 87B (1926).

Studies on the growth of yeast. III. A further study on the influence of volume of medium employed. G. L. Peskett. Biochem. J. 21, 104-10 (1927).

The production of a yeast-growth stimulant by heating media under pressure. E. I. Fulmer and B. Huesselmann. Iowa State Coll. J. Sci. 1, 411-7 (1927).

Rate of the multiplication of yeast at different temperatures. O. W. Richards. J. Phys. Chem. 32, 1865-71 (1928).

Potentially unlimited multiplication of yeast with constant environment, and the limiting of growth by changing environment. O. W. Richards. J. Gen. Physiol. 11, 525-38 (1928).

The effect of the medium on the weight and osmotic pressure of yeast cells. G. Seliber and R. Katznelson. Protoplasma 7, 204-31 (1929).

Effect of various preparations on the growth of bakers' and brewers' yeasts. R. J. Williams, M. E. Warner and R. R. Roehm. J. Am. Chem. Soc. 51, 2764-73 (1929).

The growth of yeast and increase of its components in large-scale production. H. Claassen. Biochem. Z. 228, 154-62 (1930).

Biological observations on the growth of yeast with special reference to nitrates as a nitrogen source. K. Pirschle. Biochem. Z. 218, 412-44 (1930).

Studies on growth acceleration in protozoa and yeast. H. H. Darby. J. Exptl. Biol. 7, 308-16 (1930).

Nutritional physiology of a cultivated top yeast. W. Schwartz and R. Kautzmann. Arch. Mikrobiol. 2, 537-67 (1931).

The production of yeast growth stimulants by the molds. I. Aspergillus niger, Trichoderma lignorum and Aspergillus clavatus. H. Schopmeyer and E. I. Fulmer. J. Bact. 22, 23-8 (1931).

Is the nutritive for "Gebrüder Mayer" yeast of universal biological importance? R. J. Williams, C. M. Lyman, G. H. Goodyear and J. H. Truesdail. J. Am. Chem. Soc. 54, 3462-3 (1932).

The stimulation of yeast growth by thallium, a "bios" impurity of asparagine. O. W. Richards. J. Biol. Chem. 96, 405-18 (1932).

Production of yeast-growth stimulants by molds on various media. H. Schopmeyer. Iowa State Coll. J. Sci. 6, 471-2 (1932).

The effect of phosphorous compounds on the development of yeasts cultivated aerobically on molasses must. G. Mezzadrolì and A. Amati. Giorn. biol. applicata ind. chim. 2, 1-20 (1932); Chem. Abstr. 28, 5173 (1934).

Yeast growth. T. Philipson. Biochem. Z. 258, 244-50 (1933).

Yeast growth-stimulants in white sugars. H. H. Hall, L. H. James and L. S. Stuart. Ind. Eng. Chem. 25, 1052-4 (1933).

Reproduction of yeast cultures. A. Klem. Hvalrad. Skrift. 7, 55-91 (1933).

Plant-growth substances. XIII. Heteroauxin as metabolic product of lower plant organisms. Isolation from yeast. F. Kogl and D. G.F.R. Kostermans, with A. J. Haagen-Smit and H. Erxleben. Z. physiol. Chem. 228, 113-21 (1934).

Influence of different cations on the growth of yeast cells. A. Lasnitzki and E. Szorényi. Biochem. J. 28, 1678-83 (1934).

Investigations on the assimilation of growth substances by yeast from wort. N. Nielsen. Compt. rend. trav. lab. Carlsberg 20, No. 1, 16 pp. (1934).

Chemistry of cell growth I. O. Rahn. Cold Spring Harbor Symposia 2, 57-62 (1934).

The analysis of growth as illustrated by yeast. O. W. Richards. Cold Spring Harbor Symposia 2, 157-66 (1934).

The growth of yeast in synthetic media and the factors produced by yeast which limit this growth. V. Hartelius. Compt. rend. trav. lab. Carlsberg 20, No. 7, 44 pp. (1934).

The nutritive functions of yeast. R. H. Hopkins. Congr. intern. tech. chim. ind. agr. (Brussels 1935) 4, tome 3, 409-15 (1935).

Effects of chemical stimulants on yeast growth. F. L. Trainina. Proc. Inst. Sci. Res. Food Ind., Leningrad, 2, No. 2, 141-55 (1935); Chem. Abstr. 30, 5256 (1936).

Comparative investigations of the action of various growth factors on the growth of some yeasts. L. Ronsdorf. Arch. Mikrobiol. 6, 309-25 (1935).

The growth of yeast with special reference to the pH of the medium. K. Taxner. Kiserletugyi Kozlemenyek 38, 225-42 (1935); Chem. Abstr. 30, 3938-9 (1936).

Yeast growth substances. N. Nielsen. Compt. rend. trav. lab. Carlsberg, physiol., 21, 151-82 (1935).

Production of bacterial growth stimulants by yeast. L. H. Pulkki. Ann. Acad. Sci. Fennicae 441, No. 1, 141 pp. (1935).

Yeast feeding and yeast breeding. C. A. Warren. Brewer and Maltster 54, No. 4, 31, 80 (1935).

The influence of protein preparations, prepared according to S. S. R. Perov, on the multiplication of yeasts. V. Troitskii. Trudy Lab. Izuch. Belka Belkov. Obmena Org. Vsesoyuz. Akad. Sel'sko-Khoz. Nauk Lenina 9, 53-62 (1936); Chem. Abstr. 34, 5102 (1940).

Effect of yeast on the growth of Sarcina. J. Fuchs. Wochschr. Brau. 53, 1-3 (1936).

Yeast growth substances. F. Boas. Angew. Bot. 18, 348-50 (1936).

Yeast-growth substances in buds and leaves. J. Dagys. Protoplasma 26, 20-44 (1936).

Role of phosphates in oxidative processes. VII. Activation of growth of yeast by phosphates. A. Malkov and A. Mesonshik. Ukrain. Khim. Zhur. 12, 153-67 (68 in English) (1937); Chem. Abstr. 32, 5415 (1938).

The measurement of the biocatalysts of yeasts. Y. Medvedev and N. S. Vysotskaya. Fermentforsch. 15, 257-63 (1937).

The effect of certain stimulants on the growth of yeast. J. B. Lesh. Iowa State Coll. J. Sci. 12, 140-1 (1937).

Action of growth factor on various types of yeast and mold. N. Nielser and Sing-Fang Fang. Compt. rend. trav. lab. Carlsberg, physiol., 22, 141-54 (1937).

Some effects of methylcholanthrene on the morphology and growth of yeasts. C. W. Dodge and B. S. Dodge. Ann. Mo. Bot. Garden 24, 583-9 (1937).

Separation of growth-promoting factors for yeast and molds. N. Nielsen and V. Hartelius. Compt. rend. trav. lab. Carlsberg, physiol., 22, 1-22 (1937).

Role of certain growth factors in the production of diphtheria toxin. A. Mustafa. Compt. rend. soc. biol. 125, 615-17 (1937).

Yeast-growth substance in maize seedlings. J. Dagys. Protoplasma 28, 205-29 (1937).

The effect of low temperature on the development of microorganisms. III. The effect of low temperature on the growth of bacteria and yeasts. F. M. Chistyakov and G. L. Noskova. Mikrobiologiya 7, 55-6, 78 (1938).

Sugar-degradation products that affect the growth of yeast. S. G. Machevitskaya. J. Appl. Chem., Leningrad, 11, 511-14 (1938).

Dynamics and the determination of yeast growth substance activity. C. Enders and M. Hegendorfer. Biochem. Z. 298, 16-26 (1938).

Certain factors affecting the growth of yeast. N. F. True, L. Paul, N. J. Miller and P. S. Prickett. J. Bact. 36, 249-50 (1938).

Colchicine stimulation of yeast growth fails to reveal mitosis. O. W. Richards. J. Bact. 36, 187-95 (1938).

Mathematical representation of the course of yeast growth. R.S.W. Thorne. J. Inst. Brewing 45, 472-86 (1939).

Investigations on the development of yeast cells. (Saccharomyces sp.). Mechanical equations expressing the development of living beings, and the biophysical-chemical relationships. F. Kovessi. Intern. Congr. Microbiol. Rept. Proc. (N. Y. 1939) 3, 753 (1940) (in English).

Growth-factor content of various raw materials used in the manufacture of pressed yeast. R. Illies. Z. Spiritusind. 62, 59-60, 68, 70 (1939).

Studies on biological cell substance synthesis in yeast. IV. Long cultivation experiments with simple carbon compounds. H. Fink and J. Krebs. Biochem. Z. 300, 175-82 (1939); V. Relation of carbon dioxide to the yeast yield. Ibid. 301, 9-2 (1939); VII. Discussion of the yields of yeast under standard conditions. Ibid. 137-42.

Growth of yeast in synthetic nutrient media of constant pH. S. Hjorth-Hansen. Biochem. Z. 301, 292-300 (1939).

Bound yeast-growth factor. J. Dagys. Protoplasma 31, 524-34 (1939) (in German).

The growth-promoting substance of brewers' yeast as a growth-inhibiting factor for yeast, and its effect upon the economic coefficients. V. Hartelius. Planta 29, 621-35 (1939).

Yeast growth factors of birch sap; J. Dagys. Compt. rend. trav. lab. Carlsberg, physiöl., 23, 1-15 (1940).

Biochemistry of "Bakanae" fungus of rice. V. Effect of gibberellin on growth, fermentation and size of yeast cells. T. Hayasi. J. Agr. Chem. Soc. Japan 16, 386-8 (1940).

Raw materials rich in growth substances as mash ingredients in the production of bakers' yeast. F. Wendel. Brenneri Ztg. 57, 71, 73 (1940); Chem. Abstr. 36, 1731 (1942).

The practical significance of growth substances in the manufacture of bakers' yeast from molasses. F. Wendel. Brenneri Ztg. 57, 67, 69 (1940); Chem. Abstr. 36, 2992 (1942).

Investigations on yeast food. R. H. Hopkins. Wallerstein Labs. Commun. 4, No. 11, 7-13 (1941).

Growth-promoting nutritives for yeasts. R. J. Williams. Biol. Revs. Cambridge Phil Soc. 16, 49-80 (1941).

Isolation of the growth-promoting substance H^1 from yeast. R. Kuhn and K. Schwarz. Ber. 74B, 1617-24 (1941).

Role of potassium in yeast. E. J. Conway and J. Breen. Nature 148, 724 (1941).

The growth substances of yeast and their determination by Nielsen's method in nutrient solutions, especially molasses. H. Claassen. Z. Spiritusind. 65, 1-2 (1942).

The importance of growth factors in the propagation of yeast. V. Stuchlik. Chem. Obzor 17, 1-6, 25-31 (1942); Chem. Abstr. 37, 4528 (1943).

Yeast-growth-promoting effect of diaminocarboxylic acid derived from biotin. V. du Vigneaud, K. Dittmer, K. Hofmann and D. B. Melville. Proc. Soc. Exptl. Biol. Med. 50, 374-5 (1942).

The "unknown factor" in the growth of Saccharomyces cerevisiae. L. H. Leonian and V. G. Lilly. J. Bact. 45, 191-2 (1943).

Effect of halogens and halogenated compounds

The behavior of bacteria, yeasts and molds towards iodine compounds. A. Kossowicz and W. Loew. Z. Garungsphysiol. 2, 1913.

Fermentative action of fresh yeast in the presence of antiseptics. C. Neuberg and F. F. Nord. Biochem. Z. 67, 12-17 (1914).

Comparative studies of the ferment-retarding action of some chlorine derivatives of methane, ethane and ethylene. H. Plagge. Biochem. Z. 118, 129-43 (1921).

The action of iodine on yeast. F. Windisch. Wochschr. Brau. 44, 516-7 (1927).

Studies on iodine as a biogenous element. XI. The effect of iodine on yeast. I. K. Scharrer and W. Schwartz. Biochem. Z. 187, 159-79 (1927).

Action of chloroform on development of yeast. M. N. Meissel. Wochschr. Brau. 45, 488-90 (1928).

Persistence of acclimatization to fluoride after sporulation of the yeast. H. Stantial. Univ. of Toronto. Trans. Roy. Soc. Can. (3) 22, III, 263-5 (1928).

Biochemical studies on iodine. K. Scharrer. Z. angew. Chem. 41, 980-2 (1928).

The influence of iodine upon the growth and metabolism of yeasts. J. E. Greaves, C. E. Zobell and J. Dudley Greaves. J. Bact. 16, 409-30 (1928).

The inhibition of glucolysis of living yeast cells. II. Specific inhibition. W. Schoeller and M. Gehrke. Klin. Wochschr. 9, 1129-30 (1930).

The influence of moniodoacetic acid on the enzymic hydrolysis of carbohydrate. E. Lundsgaard. Biochem. Z. 220, 1-7 (1930).

The influence of moniodoacetic acid on the hydrolytic and oxidative metabolism. E. Lundsgaard. Biochem. Z. 220, 8-18 (1930).

Effect of iodine on the carbon dioxide production of fermentation yeasts. K. Scharrer and G. Claus. Arch. Mikrobiol. 1, 343-64 (1930).

The influence of iodine on the reproduction of yeasts. J. Kooijmans. Zentr. Bakt. Parasitenk., Abt. II, 82, 347-53 (1930).

Disinfection. III. The taking up of iodine by yeast cells. G. Knaysi and M. Gordon. J. Infectious Diseases 47, 318-21 (1930).

Action of various halogen derivatives upon alcoholic fermentation. P. Cayrol. Compt. rend. 193, 446-7 (1931).

Fermentation by yeast preparations. I. Effect of moniodoacetate on the fermentation of hexosediphosphate. II. Action of arsenate on the induction period of zymine. M. Giffen MacFarlane. Biochem. J. 25, 822-8 (1931).

Effect of iodine on yeast. II. K. Scharrer and W. Schwartz. Biochem. Z. 245, 218-33 (1932).

The influence of phosphates and bromates as catalysts for the growth of *Saccharomyces cerevisiae*. E. Caserio. Boll. ist. sieroterap. milan. 12, 742-51 (1933).

Action of various halogen derivatives on the lower fungi (yeasts and molds). L. Genevois, P. Cayrol and T. Nicolaieff. Compt. rend. soc. biol. 112, 1382-3 (1933).

The effect of halogen acids and their esters upon yeast cells. P. Cayrol. Ann. physiol. physicochim. biol. 9, 999-1102 (1933).

The action of fluoride on the intermediary processes in the glucolysis of yeast. E. Lehnartz. Z. physiol. Chem. 230, 90-5 (1934).

Preservation and selective fermentation. (action of monobromoacetic acid). J. Dubaquié and G. Debordes. Ann. ferment. 1, 33-40 (1935).

Relief of fluoride inhibition in live top yeast by adenylic acid. J. Runnstrom and T. Hemberg. Naturwissenschaften 25, 74 (1937).

Inhibition of fermentation of dry yeast by monoiodoacetate. J. Runnström and F. Alm. Naturwissenschaften 25, 73-4 (1937).

Toxic action on yeast of some compounds which form hydrochloric acid by hydrolysis. H. Magne and P. Rémy. Bull. soc. chim. biol. 19, 1092-1104 (1937).

The influence of formalin and chlorine on the reproduction energy of yeast in molasses. E. Kvasnikov. Spirto-Vodochnaya Prom. 14, No. 2, 22-5 (1937); Chem. Abstr. 33, 4737 (1939).

How does fluoride depress yeast respiration? J. Runnström, H. Borei and E. Sperber. Arkiv Kemi Mineral. Geol. 13A, No. 22, 29 pp. (1939).

Protection against the inhibitory action of fluoride (Protection conferred by substrate in the respiration and fermentation of bakers' yeast). John Runnström, R. Gurney and E. Sperber. Enzymologia 10, 1-39 (1941).

Chemical mechanism of fluoride inhibition of yeast. O. Warburg and W. Christian. Naturwissenschaften 29, 590 (1941).

High Temperature Yeasts

Heat resistant races of yeast. J. Renning. Ber. 62B, 1267-70 (1929).

High-temperature yeasts. G. Staiger and M. Glaubitz. Z. Spiritusind. 53, 2-3 (1930).

Yeasts with high fermentation temperatures. G. Staiger and M. Glaubitz. Zentr. Bakt. Parasitenk, Abt. II, 80, 225-27 (1930).

Biochemical control of heat resistance. N. A. Khlebnikova and G. V. Bolondz. Compt. rend. acad. sci. U.R.S.S. (n.s.) 2, 584-6 (586-8 in English)(1934).

Fermentation in agricultural distilleries. J. Dehnicke. Z. Spiritusind. 57, 289-90, 292 (1934).

Effect of Hormones

Effect of some food hormones and glandular products on the rate of growth of Paramecium caudatum. M. H. Chambers. Biol. Bull. 36, 82-91 (1919).

Is insulin able to affect the assimilatory or dissimilatory power of yeast shaken with air? O. Furth. Biochem. Z. 150, 265-70 (1924).

Effect of adrenaline and of related substances on the fermentation of yeast. H. Popper. Biochem. Z. 162, 271-7 (1925).

The influence of insulin on the fermenting power of yeast cells. E. Abderhalden. Fermentforsch. 8, 227-31 (1925).

The influence of thyroid preparations on the energy exchange of yeast. F. Meyer. Endokrinologie 2, 337-46 (1928).

The influence of thymus gland extracts on yeast cells (*S. cerevisiae*). M. Heller and G. Feshchenko. Biochem. Z. 217, 465-72 (1930).

The effect of hormones on yeasts, molds and bacteria. A. A. Imshenetzki. Bull. acad. sci. U.R.S.S., math. nat., 1932, 1559-77 (1578 in English) (1932).

The influence of crystalline hormones on the growth of certain species of yeast. A. P. Weber. Compt. rend. 202, 517-19 (1936).

The action of the follicular hormone on the growth of some microorganisms. A. Lund. Compt. rend. trav. lab. Carlsberg 21, physiol, 231-8 (1936).

Effect of crystalline hormones on the growth of yeasts. A. P. Weber. Ann. ferment. 3, 5-29, 65-86 (1937).

Absorption of insulin by yeasts. L. Rosenthal and J. Kamlet. Proc. Soc. Exptl. Biol. Med. 37, 650-1 (1938).

Feeding of Hogs and Sheep

Utilization of dried yeast in the rapid fattening of hogs. W. Voltz. Wochschr. Brau. 28, 537-41, 550-5 (1911).

The influence of nourishment and retention on the increase in body weight, the body form, and the slaughter results in case of growing pigs. Feeding experiments with dry yeast, potatoes, and barley. W. Voltz. Landw. Jahrb. 42, 119-79 (1912).

The utilization of two yeast mixtures (straw yeast and peat-charcoal yeast) by ruminants (sheep). W. Voltz, U. Dietrich and A. Deutschland. Landw. Jahrb. 45, 1-27 (1913).

Feeding experiments with fattening swine, making comparison of dried yeast, granulated blood and extracted fish meal. J. Klein. Milchwirtschaft. Zentr. 44, 97-103 (1915).

Utilization of brewery yeast in comparison with so-called "inorganic" yeast by the animal organism in experiments with dogs and ruminants (sheep). W. Voltz. Wochschr. Brau 36, 43-5 (1919).

The fodder value of dry yeast on the basis of efficiency and fattening experiments on sheep and hogs. F. Honcamp. Landw. Vers. Sta. 96, 143-206 (1920).

The inadequacy of white-bread flour and fish meal for prolonged growth of pigs and its amelioration with yeast or stout. A. H. Beissett and J. Golding. Biochem. J. 25, 349-57 (1931).

The influence of feeding irradiated yeast on the growth of fattening hogs. R. Gärtner and U. Gaede. Landw. Jahrb. 75, 751-55 (1932).

The effect of yeast and casein supplements to corn and soy-bean rations when fed to rats and swine. C. L. Shrewsbury, C. A. Vestal and S. M. Hauge. J. Agr. Res. 44, 267-74 (1932).

The value of wood-sugar yeast as a feeding stuff. I. The nutrient value of the yeast on the basis of metabolism and respiration trials with pigs and cows. G. Fingerling and F. Honcamp. Landw. Vers. Sta. 118, 263-86 (1934).

Nitrogen deposition in growing pigs by feeding with dry yeast, ground soy beans and peanut meal. J. Schmidt, M. Freun v. Schleinitz and E. Lagneau. Biedermanns Zentr., Abt. B., 6, 281-91 (1934).

Fattening of pigs with wood sugar yeast as the protein food in comparison with fish meal. K. Richter and H. Brüggemann. Biedermanns Zentr., Abt. B., 8, 597-9 (1936).

Feeding experiments with wood sugar yeast in fattening pigs. H. Bün-^{ger}, J. Schultz and H. Augustin. Biedermanns Zentr., Abt. B., 8, 600-7 (1936).

Feeding experiments with wood sugar yeast in fattening pigs. K. Richter H. Brüggemann, H. Bün-^{ger}, J. Schultz and H. Augustin. Biedermanns. Zentr., Abt. B., 8, 594-6 (1936).

Feeding value of wood sugar yeast. K. Richter and H. Brüggemann. Biedermanns Zentr., Abt. B., 9, 95-105 (1937).

The feeding value of yeast from sulfite waste liquor. K. Richter and R. Ehinger. Z. Tierernähr. Futtermittelk. 1, 235-40 (1938).

The feeding efficiency of refuse brewery yeast in fresh, cooked and dried forms. K. Nehring and W. Schramm. Z. Tierernähr. Futtermittelk., 3, 97-108 (1939).

Fermenting feeds for hogs. C. P. Thompson and J. C. Hillier. Okla. A. M. Coll. Agr. Expt. Sta. Mim. Cir. 27, 5 pp. (1939).

The relation of diet to the occurrence of ataxia and degeneration in the nervous system of pigs. M. M. Wintrobe, J. L. Miller, Jr., and H. Lisco. Bull. Johns Hopkins Hosp. 67, 377-406 (1940).

Digestibility of the Fink protein slops by pigs and ruminants, and the biological protein value of potato yeast. E. Mangold, H. Stotz and A. Columbus. Forschungsdienst 10, 183-91 (1940).

Digestibility and biological value of the protein of fresh and preserved brewing yeasts as determined in tests with hogs and ruminants. E. Mangold, A. Columbus and A. Peham. Biedermanns Zentr., Abt B, (n.s.) 13, 189-210 (1941).

The origin of rickets and its prevention in feeding whale-meat meal to swine. W. Kirsch and H. Jantzon. Biedermanns Zentr., Abt. B, (n.s.) 13, 180-8 (1941).

Wartime rations for pigs. Report of experiments with mangolds and biscuit waste, fodder yeast, urea and dried skim milk. R. Braude and A. S. Foot. J. Agr. Sci. 32, 70-84 (1942).

The nutritive value of yeast protein: Comparison of the supplementary values of yeast protein and casein for maize protein in the nutrition of the pig. T. F. Macrae, M. M. El-Sadr and K. C. Sellers. Biochem. J. 36, 460-75 (1942).

Yeast as a protein supplement for pigs and its relation to the appearance of rickets. R. Braude, S. K. Kon and E. G. White. J. Comp. Path. Therap. 53, 161-89 (1943).

The successful fattening of pigs on diets containing 20% of brewers' yeast. A. N. Worden. J. Comp. Path. Therap. 53, 190-5 (1943).

Feeding the hogs; quality of commercial feeds. P. S. Shearer. Flour and Feed 45, No. 2, 24, 27 (1944).

Yeast as a protein supplement for pigs; further observations on its rachitogenic affect. R. Braude, S. K. Kon and E. G. White. J. Comp. Path. Therap. 54, 88-96 (1944).

Feeding of Horses

Dry yeast and dry potatoes as food for horses. W. Voltz. Z. Spiritusind. 33, 579-80 (1910).

The use of dried yeast as feed for draught horses and the experience with yeast in practice. W. Voltz. Wochschr. Brau. 29, 209-11 (1912).

The feeding of wood sugar yeast as a carrier of protein to work horses and the replacement of oats ration by dried scrap or potato flakes mixed with wood sugar yeast. P. Ehrenberg and H. Nietsch. Landw. Vers. Sta. 125, 301-39 (1936).

Invertase

The adsorption affinity of yeast invertin. L. Michaelis. Biochem. Z. 7, 488-92 (1908).

Invertase of yeast. E. Salkowski. Z. physiol. Chem. 61, 124-38 (1909).

The development of invertase in yeast. H. Euler and D. Johannsson. Z. physiol. Chem. 76, 388-95 (1911).

Augmentation of the invertase content of living yeast. L. Lichtwitz. Biochem. Z. 56, 160 (1913).

Chemical composition and formation of enzymes. VIII. Simultaneous change in the quantity of invertase and fermentation enzymes in the living yeast. H. v. Euler and D. Johannsson. Z. physiol. Chem. 84, 97-108 (1913).

The invertase reactions of mixed yeast cultures. A. J. J. Vandevælde and A. Vanderstricht. Biochem. Z. 51, 388-97 (1913).

Invertase. I. Purification of invertase preparations by treatment with acids. J. Meisenheimer, St. Gambarjen and L. Semper. Biochem. Z. 54, 108-22 (1913).

Inversion of sucrose by invertase. VIII. An improved method for preparing strong invertase solutions from top or bottom yeast. C. S. Hudson. J. Am. Chem. Soc. 36, 1566-71 (1914).

Invertase. III. Influence of temperature upon the invertase content of yeast. J. Meisenheimer and L. Semper. Biochem. Z. 67, 364-81 (1914).

Invertase formation in yeast. H. v. Euler and H. Cramer. Biochem. Z. 58, 467-9 (1914).

Washing out of invertase and maltase from acetone-dried yeast.
E. Buchner and F. Reischle. Biochem. Z. 83, 1-5 (1917).

Regeneration of saccharase in pre-treated yeast. H. v. Euler and
O. Svanberg. Z. tech. Biol. 7, 165-72 (1919).

The content and formation of invertase in yeast. H. v. Euler and O.
Svanberg. Z. physiol. Chem. 106, 201-49 (1919).

Alteration in the inverting power of top yeast by pre-treatment.
S. Lovgren. Fermentforsch. 3, 221-40 (1920).

Toxic actions in enzymic processes. III. The influence of copper
sulfate on the autolysis of the yeast cell. O. Svanberg and H. v.
Euler. Fermentforsch. 4, 90-6 (1920).

The effect of certain stimulating substances on the invertase
activity of yeast. E. W. Miller. Univ. Chicago. J. Biol. Chem.
48, 329-46 (1921).

The purification of yeast invertase. K. Josephson. Arkiv Kemi Mineral.
Geol. 8, No. 26, 21 pp. (1923).

Behavior of α - and β -methyl glucosides toward taka-invertase.
Y. Hattori. Biochem. Z. 150, 150-8 (1924).

Invertase. X. R. Willstätter, K. Schneider and E. Bamann. Z. physiol.
Chem. 147, 248-74 (1925); IX. Invertase enrichment in yeast. R.
Willstätter, C. D. Lowry, Jr. and K. Schneider. Ibid. 146, 158-80
(1925).

Invertin. VIII. R. Willstätter and K. Schneider. Z. physiol. Chem.
142, 257-305 (1925).

Nitrogen equilibrium in the yeast cell and increase in sucrase action.
H. v. Euler, K. Josephson and H. Fink. Z. physiol. Chem. 154, 310-3
(1926).

Gluco- and fructo-sucrase. II. R. Kuhn and H. Munch. Z. physiol. Chem.
163, 1-72 (1927).

The liberation of invertin from yeast. R. Willstätter and W. Grassmann.
Biochem. Z. 203, 308-12 (1928).

Specific nature of invertase. R. Weidenhagen. Z. Ver. deut. Zucker-
Ind. 78, Tech. Tl., 406-18 (1928).

The specificity and mode of action of sugar-splitting enzymes. R. Weidenhagen. Z. Ver. deut. Zucker Ind., 79, Tech. Tl., 115-54 (1929).

Physiological function of magnesium in plants. E. Canals. Bull. soc. chim, biol. 11, 14-45 (1929).

Antigenic properties of yeast invertase. K. Matsuoka. Z. physiol. Chem. 193, 167-70 (1930).

Diffusion of yeast invertase through collodion membranes. J. M. Nelson and A. H. Palmer. J. Biol. Chem. 87, 1-6 (1930).

Splitting sucrose by α -glucosidase from yeast. R. Weidenhagen. Z. Ver. deut. Zucker Ind. 80, Tech. Tl., 374-83. (1930).

Separation of α -glucosidase and β -h-fructosidase in yeast autolyzates R. Weidenhagen. Z. Ver. deut. Zucker Ind. 80, Tech. Tl., 155-65 (1930).

Brief contributions. V. Activity of a nineteen-year old invertase solution. C. Neuberg and M. Kobel. Biochem. Z. 238, 251-2 (1931).

β -h-fructoside (invertase). I. R. Weidenhagen. Z. Ver. deut. Zucker Ind. 81, Tech. Tl., 501-8 (1931).

Similarity of the kinetics of invertase action in vivo and in vitro. J. M. Nelson, E. T. Palmer and B. G. Wilkes. J. Gen. Physiol. 15, 491-5 (1932); II. B. G. Wilkes and E. T. Palmer, Ibid. 16, 233-42 (1932); III. J. M. Nelson and B. G. Wilkes. Ibid. 16, 571-7 (1933).

Reactivation of koji invertase. N. Taketomi and T. Horikoshi. J. Soc. Chem. Ind. Japan 35, Suppl. binding, 583 (1932).

The liberation of invertase from yeast. II. W. Grassmann and T. Peters. Z. physiol. Chem. 204, 135-48 (1932); III. R. Willstätter and R. Rohdewald. Ibid. 209, 38-48 (1932).

Separation of α -glucosidase and β -h-fructosidase in yeast autolyzates and the hydrolysis of sucrose. R. Weidenhagen. Z. Ver. deut. Zucker Ind. 82, Tech. Tl., 503-19 (1932).

The enrichment of β -h-fructosidase (invertase) in bottom-fermented beer yeast. R. Weidenhagen. Angew. Chem. 47, 581-2 (1934).

Increasing the β -h-fructosidase (invertase) content of bottom-fermentation beer yeast; enzyme formation in the yeast cell. R. Weidenhagen and L. Schriever. Z. Ver. deut. Zucker Ind. 84, Tech. Tl., 402-33 (1934).

Preparation of highly active yeast invertase. J. G. Lutz and J. M. Nelson. J. Biol. Chem. 107, 169-77 (1934).

Studies on invertase. I. A new modified method for the isolation and purification of invertase. T. Kôzaki. Japan. J. Gastroenterol 7, 125-34 (1935).

The action of dyestuffs on invertase. The nature of the union between yeast invertase and sucrose. J. H. Quastel and E. D. Yates. Enzymologia 1, 60-80 (1936).

A simple procedure for separation of β -h-fructosidase from yeast autolyzates. R. Weidenhagen. Z. Wirtschaftsgruppe Zuckerind. 86, Tech. Fl., 473-81 (1936).

The coenzyme of invertase (cosucrase of bios, biosterol or vitamin D₂). J. Stoeq. Arch. intern. physiol. 49, 1-15 (1939).

Irradiated

Action of ultraviolet rays on the accessory food factors. Z. Z. Zilva. Biochem. J. 13, 164-71 (1919).

New observations on fat-soluble growth factors. H. v. Euler. Arkiv Kemi Mineral. Geol. 9, No. 28, 6pp. (1925).

The increase in volume and vitamin content of human and cow milk by means of irradiated yeast. M. Wachtel. Münch. med. Wochschr. 76, 1513-4 (1929).

Antirachitic value of irradiated yeast. S. K. Kon and M. Mayzner. Lancet 218, I, 794-6 (1930).

Fat-soluble vitamins. XXX. The antirachitic value of cow milk as modified by the feeding of irradiated yeast. H. Steenbock, E. B. Hart, F. Hanning and G. C. Humphrey. J. Biol. Chem. 88, 197-214 (1930).

Dietary factors influencing calcium assimilation. XIII. The influence of irradiated yeast on the calcium and phosphorus metabolism of milk-ing cows. E. B. Hart, H. Steenbock, O. L. Kline and G. C. Humphrey. J. Biol. Chem. 86, 145-55 (1930).

Increasing the vitamin D potency of cow milk by the daily feeding of irradiated yeast or irradiated ergosterol. B. H. Thomas and F. L. Macleod. Science (n.s.) 73, 618-20 (1931).

The antirachitic value of irradiated yeast. S. K. Kon. Lancet 221, II, 579-82 (1931).

The antirachitic potency of the milk of cows fed irradiated yeast or ergosterol. A. F. Hess, J. M. Lewis, F. L. MacLeod and B. H. Thomas. J. Am. Med. Assoc. 97, 370-5 (1931).

Possibility of increasing the milk secretion of cows by feeding with irradiated feeding stuffs. F. Bilek and L. Hynek. Zemed. Arch. 22, 449-54 (1931); Chem. Abstr. 28, 3447 (1934).

Influence of feeding irradiated yeast upon milk and its nutritive value. F. Kieferle. Intern. Milchwirtsch. Kongr. (Copenhagen 1931) 97, Sec. 1, 67-77 (1931); Chem. Abstr. 27, 755 (1933).

Quantitative studies on the formation of vitamin D₂ in dried beer yeast after irradiation with ultraviolet light. K. Schubel and W. Gehlen. Arch. exptl. Path. Pharmacol. 166, 348-53 (1932).

Enriching yeast with vitamin D by irradiation with ultraviolet rays. V. Vadinov, A. Voznaya and V. Semashko. Elektr. Sel'skogo Khoz. 2, No. 8, 20-38 (1932); Chem. Abstr. 27, 1032 (1933).

A study of the milk, blood and excreta of cows fed moderate and excessive amounts of irradiated yeast or ergosterol. A. F. Hess, R. F. Light, C. N. Frey and J. Gross. J. Biol. Chem. 97, 369-77 (1932).

Antirachitic value of milk from cows fed irradiated yeast. E. T. Wyman and A. M. Butler. Am. J. Diseases Children 43, 1509-18 (1932).

The effect on milk yield of feeding irradiated yeast. H. M. Kroon. Milchwirtschaft. Zentr. 60, 325-8 (1932).

Irradiated yeast as a feeding stuff to increase milk production. H. Poelt. Z. Vitaminforsch. 1, 289-294 (1932).

The reaction of the chicken to irradiated ergosterol and irradiated yeast as contrasted with the natural vitamin D of fish liver oils. H. Steenbock, S. W. F. Kletzien and J. G. Halpin. J. Biol. Chem. 97, 249-64 (1932).

The vitamin D potency of sun-irradiated dried yeast. K. H. Coward. Lancet 225, II, 920 (1933).

Increase of vitamin D in yeast by ultraviolet irradiation. S. N. Matzko. Arch. Tierernahr. Tierzucht 9, 623-36 (1933).

Vitamin D milk from yeast-fed cows. E. A. Woelffer. Cornell Vet. 23, 313-24 (1933).

The antirachitic value of irradiated yeast. S. Lepsky. Z. Zucht., Reihe B, 26, 237-44 (1933).

Comparative antirachitic efficiency of irradiated ergosterol, irradiated yeast and cod-liver oil for the chicken. R. M. Bethke, P. R. Record and D. C. Kennard. J. Nutrition 6, 413-25 (1933).

Feeding tests show no injury when irradiated foods make up entire ration. F. C. Schoenleber and H. Steenbock. Bull. Agr. Expt. Sta. Univ. Wis. 430 (Ann. Rept. 1933-4) 136 (1935).

Relative values of irradiated yeast and irradiated ergosterol in the production of vitamin D milk. W. C. Russell, D. E. Wilcox, J. Waddell and L. T. Wilson. J. Dairy Sci. 17, 445-53 (1934).

The production of vitamin D milk by the feeding of irradiated yeast. C. A. Smith. Milk Plant Mo. 23, No. 5, 24-7 (1934).

The relative efficiencies of irradiated ergosterol and irradiated yeast for the production of vitamin D milk. W. E. Kraus, R. N. Bethke and W. Wilder. J. Dairy Sci. 17, 685-93 (1934).

The enrichment of cow milk in vitamin D by feeding irradiated yeast. M. Schieblich. Biedermanns Zentr., Abt. B, (n.s.) 6, 71-4 (1934).

Feeding experiment with irradiated and non-irradiated yeast. A. Golf and K. Seeling. Biedermanns Zentr., Abt. B, (n.s.) 6, 65-70 (1934).

Irradiation of yeast oryzanin. F. F. Heyroth and J. R. Loofbourow. J. Am. Chem. Soc. 56, 2010-11 (1934).

Vitamin D in the blood and milk of cows fed irradiated yeast. R. F. Light, L. T. Wilson and C. N. Frey. J. Nutrition 8, 105-11 (1934).

Allments of the lower extremities of chickens kept in breeding batteries. A. Solun and A. Arsen'ev. Biedermanns Zentr., Abt. B, (n.s.) 6, 498-514 (1934).

Results of irradiating Saccharomyces with monochromatic ultraviolet light. I. Morphological and respiratory changes. R. H. Oster. J. Gen. Physiol. 18, 71-88 (1934); II. The influence of modifying factors. Ibid. 243-50; IV. Relation of energy to observed inhibitory effects. R. H. Oster and W. A. Arnold. Ibid. 18, 351-5 (1935).

Antirachitic cow milk. A. comparative study of antirachitic value of irradiated cow milk and of milk produced by cows fed irradiated yeast. H. J. Gerstenberger, A. J. Horesh, A. L. van Horn, W. E. Kraus and R. M. Bethke. J. Am. Med. Assoc. 104, 816-26 (1935).

A clinical comparison of the antirachitic values of irradiated yeast and of cod-liver oil. E. L. Compere, T. E. Porter and L. J. Roberts. Am. J. Diseases Children 50, 55-76 (1935).

The influence of vitamin D on the productivity of adult hens. Comparative effects of irradiated yeast and cod-liver oil on the productivity of hens and the incubation quality of the eggs. E. V. Dmitrieva. Trans. Dynamics Development, Moscow, 9, 303-10 (310 in English)(1935).

Yeast irradiated with ultraviolet light as a source of vitamin D on poultry breeding farms. M. Zavadovskii, S. Lepskii, A. Krashenninnikova, G. Samokhvalova and P. Balezin. Trans. Dynamics Development, Moscow, 9, 269-301 (301 in English)(1935).

Comparative antirachitic efficiency of vitamin D in irradiated milk, metabolized (yeast) milk and cod-liver oil. R. M. Bethke, W. E. Kraus, P. R. Record and O. H. M. Wilder. J. Nutrition 11, 21-30 (1936).

Antirachitic value of irradiated yeast in infants. T. G. Drake, F. F. Tisdall and A. Brown. J. Nutrition 12, 527-33 (1936).

The prophylactic value of vitamin D irradiated and vitamin D yeast-fed milk. R. C. Eley, E. C. Vogt and M. G. Henderson. New Engl. J. Med. 215, 110-11 (1936).

The effect of ingestion of irradiated yeast, molds and ergosterol on the antirachitic potency of ewe milk. W. G. Kirk. Iowa State Coll. J. Sci. 13, 235 (1939).

How to get vitamin D into milk by feeding cows yeast. C. N. Frey. Food Industries 13, No. 6, 46-8 (1941).

Action of magnetic field

Changes in the process of alcoholic fermentation by the action of an oscillating electromagnetic field on the yeast. E. Benedetti. Rend. accad. Lincei, fis. mat. nat., (6) 5, 1029-34 (1927); II. Ibid. 6, 331-5 (1927).

Influence of the oscillatory electric field of a tube which contains argon on beer yeast. N. Floresco. Bul. Fac. Stiinte Cernauti 8, 167-71 (1934); Chem. Abstr. 29, 7576 (1935).

Electrogermination. A. Grabenwitz. Nature, Paris, No. 2953, 462-4 (1935).

The growth of bacteria, yeasts and molds in a strong magnetic field. M. W. Jennison. J. Bact. 33, 15-16 (1937).

Growth of yeast in a magnetic field. G. C. Kimball. J. Bact. 35, 109-22 (1938).

Maltase

Maltase activities of different yeasts. F. Schönfeld and H. Krumhaar. Wochschr. Brau. 34, 157-9 (1917).

Influence of stimulants and of storage under water and beer, on the maltase activity of yeast. F. Schönfeld and M. Korn. Wochschr. Brau. 35, 129-32 (1918).

Dependence of maltase-activity on the state of development of yeast. F. Schönfeld, H. Krumhaar and M. Korn. Wochschr. Brau. 35, 175-6 (1918).

Maltase solution from yeast. R. Willstätter, T. Oppenheimer and W. Steibelt. Z. physiol. Chem. 110, 232-40 (1920).

Reversion syntheses (I). The action of yeast maltase. H. Fringsheim and J. Leibowitz. Ber. 57B, 1576-9 (1924).

Yeast maltase. V. J. Isaiev. J. Inst. Brewing 32, 552-73 (1926).

Yeast maltase. VI. R. Willstätter and E. Bamann. Z. physiol. Chem. 151, 242-72 (1926).

Extraction of maltase from yeast. V. K. Kriebel, E. L. Skau and E. W. Lovering. J. Am. Chem. Soc. 49, 1728-35 (1927).

The presence of maltase and sucrase in Schizosaccharomyces octosporus (Beijerinck) and their separation. E. Hofmann. Biochem. Z. 272, 417-25 (1934).

The preparation of maltase from yeast. L. Mauquoy. Bull. assoc. étud. école sup. brasserie univ. Louvain 37, 93-4 (1937); Chem. Abstr. 33, 4610 (1939).

Metabolism

The behavior of yeasts and molds toward sodium thiosulfate. A. Kossowicz and W. Loew. Z. Garungsphysiol. 2, 87-103 (1912).

Metabolism of Aspergillus niger, yeast and potato. H. J. Waterman. Z. Garungsphysiol. 5, 5-9 (1914).

Studies on yeast. II. The metabolism of the yeast cell, with special reference to the thermal phenomena of fermentation. H. T. Brown. Ann. Bot. 28, 197-226 (1914).

Nitrogen metabolism in Saccharomyces cerevisiae. L. H. Lampitt. Biochem. J. 13, 459-486 (1919).

An improved procedure for metabolism experiments. G. R. Cowgill. J. Biol. Chem. 56, 725-37 (1923).

"Biocatalysts" and carbohydrate metabolism. H. v. Euler and K. Myrback. Chem. Zelle Gewebe 12, 57-61 (1924).

Carbohydrate and fat metabolism in yeast. I. S. Maclean and D. Hoffert. Biochem. J. 17, 720-41 (1923); II. The influence of phosphates on the storage of fat and carbohydrate in the cell. Ibid. 18, 1273-8 (1924); III. The nature of the intermediate stages. Ibid. 20, 343-57 (1926).

The assimilation of glycerol by yeast shaken with oxygen. J. Marian. Biochem. Z. 150, 290-303 (1924).

Studies in yeast metabolism. I. A. K. Balls and J. B. Brown. J. Biol. Chem. 62, 789-821 (1925); II. Carbon dioxide and alcohol. Ibid. 823-36.

The products of metabolism of yeast growth and fermentation and their relation to race and environment. H. Luers and Z. Opekar. Wochschr. Brau. 42, 49-52, 55-7 (1925).

Formation of acetylmethylcarbinol and 2,3-butylene glycol in the metabolism of yeast. A. J. Kluyver, H. J. L. Donker and F. V. Hooft. Biochem. Z. 161, 361-78 (1925).

Sulfur metabolism of yeast. H. Sugata and F. C. Koch. Plant Physiol. 1, 337-46 (1926); Proc. Soc. Exptl. Biol. Med. 23, 764-5 (1926).

The effect of carbon monoxide on the metabolism of yeast. O. Warburg. Biochem. Z. 177, 471-86 (1926).

The action of monoxide and light on the metabolism of yeast. O. Warburg. Naturwissenschaften 14, 759 (1926).

Variations in absorbing power. J. Effront. Monit. sci. (5) 16, 3-11 (1926).

The influence of sugars on the metabolism of yeasts. A. Osterwalder. Centr. Bakt. Parasitenk, Abt. II, 71, 357-72 (1927).

Typical poisons for the metabolism of yeasts. W. Heubner and R. Meier. Nachr. Ges. Wiss. Göttingen, math. phys., 1927, 115-24 (1927).

The metabolism of yeast. O. Warburg. Biochem. Z. 189, 350-3 (1927).

Relationships between oxybiotic and anoxybiotic metabolism of culture yeasts. F. Windisch. Z. physiol. Chem. 179, 88-98 (1928).

The nitrogen excretion of yeast during fermentation. N. N. Ivanov and F. A. Krupkina. Biochem. Z. 212, 255-66 (1929).

Microbic metabolism of carbohydrates. I. A mechanism of microbial fermentation of carbohydrates. S. Yoshida. Sei-i-kwai Med. J. 48, No. 8, Abstr. 9-12 (1929).

Metabolism of yeast and mycelium forms of Mucor guilliermondi. H. Luers, R. Kuhles and H. Fink. Biochem. Z. 217, 253-78 (1930).

Metabolism of yeasts in relation to the fermentation of beer. F. Windisch. J. Inst. Brewing 37, 561-71 (1931).

Oxygen consumption and carbon dioxide production during the growth of yeast. O. W. Richards and F. W. Haynes. Plant Physiol. 7, 139-44 (1932).

An application of the autocatalytic growth curve to microbial metabolism. H. C. Pulley and J. D. Greaves. J. Bact. 24, 145-68 (1932).

The rate of oxygen utilization by yeast as related to temperature. T. J. R. Stier. J. Gen. Physiol. 16, 815-40 (1933).

The metabolism of the yeast cell. F. Windisch. Ergeb. Enzymforsch. 2, 169-78 (1933).

The fat and lipoid metabolism of yeast. W. Halden, F. Bilger and R. Kunze. *Naturwissenschaften* 21, 660-1 (1933).

Note on the storage of carbohydrate and fat by Saccharomyces froberg when incubated in sugar solutions. R. A. McAnally and I. S. Maclean. *Biochem. J.* 28, 495-8 (1934).

Prolan and yeast metabolism. M. Reiss, L. Schwarz and M. Gothe. *Endokrinologie* 14, 257-60 (1934).

Studies on the micrometabolism of yeast cells. E. A. Pribram and L. Kotler. *J. Bact.* 27, 24 (1934).

The rôle of glutathione in the metabolism of yeast. S. Machlis and K. C. Blanchard. *J. Bact.* 30, 442-3 (1935).

The micrometabolism of yeast cells of different species. II. The influence of potassium chloride and calcium chloride on the glucose esterification. E. A. Pribram and L. Kotler. *J. Bact.* 29, 21-2 (1935).

Changes in metabolism of a pure yeast culture in case of repeated pitching. E. Schild and R. Weber. *Wochschr. Brau.* 52, 161-5 (1935)/

Complementary oxidation in the autofermentation of yeast. L. Plantefol. *Ann. physiol. physiocochem. biol.* 11, 427-60 (1935).

Products of the metabolism of microorganisms. P. Petit. *Brasserie et malterie* 24, 373-7 (1935); *Chem. Abstr.* 29, 3107 (1935).

The metabolic systems involved in dissimilation of carbohydrate reserves in bakers' yeast. T. J. B. Stier and J. N. Stannard. *J. Gen. Physiol.* 19, 479-94 (1936).

Action of metadinitrobenzene on the metabolism of American bakers' yeast (Fleischmann's). P. Creach. *Compt. rend. soc. biol.* 121, 246-8 (1936).

Action of dinitrothiophene on the metabolism of Fleischmann's yeast. P. Creach. *Compt. rend. soc. biol.* 121, 248-50 (1936).

The relationship between the metabolism of yeast and lactic acid bacteria, and the reduction-oxidation potential on the media. A. J. Kluyver and J. C. Hoogerheide. *Enzymologia* 1, 1-21 (1936).

The metabolism of pathogenic yeast. T. E. Friedemann and E. E. Stenhouse. *Proc. Soc. Exptl. Biol. Med.* 36, 750-2 (1937).

What is yeast weakness? J. A. Burns. J. Inst. Brewing 43, 420-8 (1937).

Yeast weakness. J. Grant. J. Inst. Brewing 43, 417-20 (1937).

A note on a solid from yeast which affects cellular metabolism. E. S. Cook and C. W. Kreke. Stud. Inst. Divi Thomae 2, 47-9 (1938).

Degradation of energy in the metabolism of yeast cells. R. J. Winzler and J. P. Baumberger. J. Cellular Comp. Physiol. 12, 183-211 (1938).

Effect of drying and of light on the vitaid metabolism of yeast. W. W. Lepeschkin. Protoplasma 31, 357-69 (1938)(in German).

The carbohydrate and fat metabolism of yeast. V. The synthesis of fat from acetic acid: the influence of metallic ions on carbohydrate and fat storage. L. D. Macleod and I. S. Maclean. Biochem. J. 32, 157-82 (1938).

Styryl 430 and the glucose metabolism of yeast. Influence of various amounts of sodium nucleinate. Y. Pourbaix. Compt. rend. soc. biol. 131, 1306-9 (1939).

Metabolism of yeast after freezing in liquid air. F. Lynen. Ann. 539, 1-39 (1939).

Nitrogen assimilation by yeast. A consideration of yeast nutrition and metabolism. D. Burk and C. K. Horner. Commun. Sci. Pract. Brew. No. 6, 5-23 (1939).

Biochemical studies on yeast. I. Masahisa Hanawa. J. Chem. Soc. Japan. 60, 1101-11 (1939).

Production and use of permanently altered strains of yeast for studies of metabolic organization in vivo. T. J. B. Stier and J. G. B. Castor. J. Gen. Physiol. 25, 229-33 (1941).

The metabolism of the yeast cell. I. S. Kleiner. Am. Brewers 74, No. 8, 30-2 (1941).

The mineral metabolism of yeast. M. A. Joslyn. Wallerstein Labs. Commun. 4, 49-64 (1941).

Variations in the weight and capacity of yeast cultures, sources of error in the study of yeast growth and metabolism. P. Beraud. Compt. rend. soc. biol. 135, 164-6 (1941).

Effect of Metals

The reproduction of yeast in copper fermenting vessels. A. C. Chapman. J. Inst. Brewing 15, 36-54 (1909).

Influence of aluminium on yeast and beer. H. Zikes. Chem. Abstr. 7, 1783 (1913).

The non-poisonous properties of manganese. Th. Bokorny. Chem. Ztg. 38, 1290 (1915).

Action of salts of zinc and cadmium on the enzymes of yeast. S. Kostychev and S. Zubkova. J. soc. bot. Russie 1, 47-56 (1916).

Behavior of bacteria towards arsenic. H. H. Green and N. H. Kestell. S. Afr. J. Sci. 15, 369-74 (1919).

The action of silver compounds on yeast. E. Zerner and R. Hamburger. Biochem. Z. 122, 315-8 (1921).

The toxicity of metals for yeasts and molds. G. Villedieu and (Mme.) G. Villedieu. Compt. rend. 173, 797-9 (1921).

Action of some metals on the activity of yeast in egg albumin solution. G. B. Zanda. Arch. ital. biol. 71, 133-42 (1922).

Inactivation of sucrase in fresh yeast by silver nitrate. H. v. Euler and E. Walles. Z. physiol. Chem. 132, 167-80 (1924).

The significance of iron, zinc and copper for microorganisms. H. Bortels. Biochem. Z. 182, 301-58 (1927).

The action of polished metals on yeasts. F. Marboe. Zentr. Bakt. Parasitenk., Abt. II, 81, 67-73 (1930).

Effect of manganese, copper and zinc on the growth of yeast. J. S. McHargue and R. K. Calfee. Plant Physiol. 6, 559-66 (1931).

The role of iron and copper in the growth and metabolism of yeast. C. A. Elvehjem. J. Biol. Chem. 90, 111-32 (1931).

The function of magnesium in the enzymic breakdown of carbohydrate. H. v. Euler, R. Nilsson and E. Auhagen. Z. physiol. Chem. 200, 1-26 (1931).

The influence of magnesium on the growth and the acidity of Saccharomyces cerevisiae Hansen. D. Rabinovitz-Sereni. Boll. staz. patol. vegetable (n.s.) 13, 309-23 (1933).

Acceleration of fermentation by yeast preparations on the addition of arsenate. A. Hården. Biochem. Z. 253, 65-8 (1933).

The action of copper on yeast. M. H. van Laer. Ann. zymol. (2) 1, 287-304 (1934).

Influence of aluminium on the reproduction, respiration and fermentation of yeast. K. Trautwein. Z. ges. Brauw. 57, 65-7, 69-71 (1934).

Action of mercury vapor on beer yeast. N. Floresco. Bul. Fac. Stünite Cernauti 8, 296-306 (1934); Chem. Abstr. 29, 7576 (1935).

Accumulation of sodium and calcium in yeast cells. D. L. Rubinshtein and H. Burlakova. Biochem. Z. 271, 324-31 (1934).

Copper and beer. P. Petit. Brasserie et malterie 25, 193-7 (1935); Chem. Abstr. 29, 8224 (1935).

Effect of copper on yeast. B. Lampe. Brennerei Ztg. 52, 6-7 (1935); Chem. Abstr. 30, 3583 (1936).

Poisoning of yeast by copper during the process of brewing. R. Koch. Wochschr. Brau. 52, 57-63, 65-71, 76-80, 86-8, 93-5 (1935).

Action of mercury vapor of long duration on brewers' yeast. N. Floresco. Bul. Fac. Stünite Cernauti 9, 307-15 (1935); Chem. Abstr. 30, 7277 (1936).

The effect of selenium on cellular metabolism. The rate of oxygen uptake by living yeast in the presence of sodium selenite. V. R. Potter and C. A. Elvehjem. Biochem. J. 30, 189-196 (1936).

Influence of arsenic salts on the development of Saccharomyces ellipsoidus Hansen, and on the alcohol yield in the fermentation of wine. O. Verona. Boll. sez. ital. soc. intern. microbiol. 9, 88-90 (1937).

Use of copper salts as specific antiseptics in yeast cultures and in industrial fermentations. E. Pozzi-Escot. Rev. cienc., Lima, 40, 465-70 (1938).

The influence of silver ions (electrocatalytic process) on yeast. I. A. Mehlitz and H. Lorenz. Obst-Gemüse-Verwertungssind. 25, 419 (1938). II. III, Ibid. 435-9, 457-62.

The influence of metallic mercury on the respiration of cells. L. Selzer and J. P. Baumberger. J. Cellular Comp. Physiol. 19, 281-7 (1942).

Effect of V on yeast cells. S. Sampath. Current Sci. 13, 47 (1944).

Mitogenetic Rays

Radiation from yeast. E. Ludwig. Wochschr. Brau. 35, 19-20 (1918).

The metabolic effects of mitogenetic radiations. H. Gesenius. Biochem. Z. 212, 240 (1929).

Some comments on the paper by Gesenius on the metabolic effect of the Gurwitsch rays. A. Gurwitsch. Biochem. Z. 229, 109-14 (1930).

Demonstration and intensity of mitogenetic radiation. I. H. Schreiber and W. Friedrich. Biochem. Z. 227, 386-400 (1930).

Metabolic effects of the Gurwitsch rays. H. Gesenius. Biochem. Z. 225, 358-67 (1930).

Studies on the problem of mitogenetic radiation. II. Yeast as radiation detector. M. Nakaidzumi and H. Schreiber. Biochem. Z. 237, 358-79 (1931).

Phenomena of mutual induction in liquid yeast cultures. P. A. Shershnev. Arkh. Biol. Nauk 32, 359-63 (1932).

The wave length of mitogenetic rays. J. Konarski. Acta Biol. Exptl., Warsaw, 7, 276-82 (276-7 in French) (1932).

Yeast as detector of mitogenetic radiation. S. V. Konstansov. Arkh. Biol. Nauk. 32, 34-8 (1932).

Mitogenetic rays. IV. Secondary rays. L. K. Wolff and G. Ras. Zentr. Bakt., Abt. I, 128, 305-13 (1933).

Necrobiotic rays. I. W. W. Lepeschkin. Protoplasma 20, 232-50 (1932); II. Ibid. 21, 594-614 (1934).

Analysis of bud formation of yeast in relation to the Baron method. J. B. Tuthill and O. Rahn. Arkh. Biol. Nauk 35B, No. 1, 289-95 (in English) (295 in Russian) (1934).

The direct influence of mitogenetic rays upon the course of cellular division in yeast cultures. S. Y. Zalkind. Arkh. Biol. Nauk 35B, No. 1, 169-75 (173 in French) (1934).

Theory of the mitogenetic radiation. V. Yeast as detector of mitogenetic rays. M. Moiseeva. Biochem. Z. 281, 349-57 (1935).

A new procedure for the biological demonstration of mitogenetic radiations. W. W. Siebert and H. Seffert. Biochem. Z. 287, 104-8 (1936).

Long-continued action of mitogenetic rays on yeast cells. S. Zalkind and M. B. Novikov. Protoplasma 26, 577-86 (1936); S. Zalkind. Ibid. 69-72.

The influence of temperature on the spreading of mitogenetic rays in a liquid yeast culture. S. Ya. Zalkind. Bull. biol. méd. exptl. U.R.S.S. 3, 406-10 (1937)(in German).

The influence of the nutrient medium on the mitogenetic radiation of an "exhausted" yeast culture. M. B. Novikov. Bull. biol. méd. exptl. U.R.S.S. 4, 465-8 (1937)(in German).

The reversibility of morphological changes produced by the action of mitogenetic radiation on yeast cells. A. A. Bukatina. Bull. biol. méd. exptl. U.R.S.S. 5, 39-40 (1938).

Biometrical analysis of monocytogenetic cultures of yeast and experiments regarding mitogenetic induction. R. Ciferri, G. Barbensi and G. DeLucchi. Riv. biol. 28, 386-432 (1939).

Nitrogenous Constituents

Protein matter of yeast and its products of hydrolysis. P. Thomas and S. Kolodziejska. Compt. rend. 157, 243-6 (1913).

Protein substances of yeast. P. Thomas. Compt. rend. 156, 2024-7 (1913).

Complete hydrolysis of yeast protein. H. Pringsheim. Wochschr. Brau. 30, 399-400 (1913).

Protein transformation in yeast. II. Influence of medium upon the protein decomposition in yeast. W. Zaleski and W. Schataloff. Biochem. Z. 69, 294-304 (1915).

Yeast protein. C. Neuberg. Wochschr. Brau. 32, 317-20 (1915).

The nitrogenous substances of yeast. J. Meisenheimer. Wochschr. Brau. 32, 325-6 (1915).

Presence and estimation of tryptophan in protein material of yeast. P. Thomas. Bull. soc. chim. biol. 1, 67-74 (1919).

Nitrogenous constituents of yeast. J. Meisenheimer. Z. physiol. Chem. 104, 229-83 (1919); II. The purine bases and diamino acids. Results. Ibid. 114, 205-49 (1921).

Tyrosine and dibasic amino acids in the proteins of yeast. P. Thomas and L. Chabas. Compt. rend. 170, 1622-5 (1920).

The proteins of yeast. I. Preparation. P. Thomas. Ann. inst. Pasteur 35, 43-95 (1921).

Protein decomposition in yeast during fermentation. N. N. Ivanov. Biochem. Z. 120, 25-61 (1921).

An autoxidizable constituent of the cell. F. G. Hopkins. Biochem. J. 15, 286-305 (1921).

Yeast protein. A. Kiesel. Z. physiol. Chem. 118, 304-6 (1922).

Colloid chemistry of yeast proteins. H. Lüers and K. Schuster. Kolloid Z. 32, 334-7 (1923).

The occurrence of a sulfur-containing amino acid in an alcoholic extract of yeast. S. Odake. Biochem. Z. 161, 446-55 (1925).

The volutin in yeast cells. M. Glaubitz. Z. Spiritusind. 48, 363 (1925)

Simpler nitrogenous constituents of yeast. I. Choline and nicotinic acid. H. B. Vickery. J. Biol. Chem. 68, 585-92 (1926).

The nitrogen content of growing cultures of Mycoderma and Saccharomyces cerevisiae. L. M. Christensen. Plant Physiol. 3, 61-9 (1928).

The action of various amino acids on yeast peptidase. A. Fodor and R. Cohn. Z. physiol. Chem. 176, 17-28 (1928).

Nitrogen distribution in the yeast proteins produced from ammonium sulfate as a sole source of nitrogen. Y. Tomeda and M. Wadano. J. Soc. Chem. Ind. Japan 33, Suppl. binding, 27-9 (1930).

Purine content of yeast. F. M. Kuen and K. Püringer. Biochem. Z. 272, 113-8 (1934).

Proteins of yeast (Saccharomyces cerevisiae). F. L. Csonka. J. Biol. Chem. 109, 703-15 (1935).

The relation between chemical structure and colloidal form of proteins. A. Fodor and S. Kuk. Kolloid Z. 74, 66-87 (1936).

Proteins of yeast in regard to various growth media. H. Luers and M. Vaidya. Z. Spiritusind. 59, 365-6, 377-8 (1936).

The Kapeller-Adler method for the determination of histidine. The histidine content of yeast. D. W. Woolley and W. H. Peterson. J. Biol. Chem. 122, 207-11 (1937).

Biochemistry of Torula utilis. II. Composition of yeast, especially of the yeast protein. H. Fink and F. Just. Biochem. Z. 300, 84-8 (1938).

Tyrosine from yeast. K. Myrback. Österr. Chem. Ztg. 42, 91 (1939).

The chemical nature of yeast. K. Kazakov. Uchenye Zapiski Kazan Gosud. Zootekh. Vet. Inst. Bauman 50 No. 2, 19-47 (1939); Chem. Abstr. 36, 3222 (1942).

The "volutin" of yeast. P. Biebuyck. Fermentatio 1940, 3-13 (1940); Chem. Abstr. 34, 1810 (1940).

A flavoprotein from yeast. D. E. Green, W. E. Knox, P. K. Stumpf and J. L. Oncley. J. Biol. Chem. 138, 775-82 (1941).

Nonprotein nitrogen of yeast. I. Total purine content. K. Dirr and P. Decker. Biochem. Z. 316, 239-44 (1943).

Effect of β -alanine and other growth substances on the N content of yeast. V. Hartelius. Naturwissenschaften 30, 660 (1942).

Determination of Nitrogen

Application of the micro-Kjeldahl nitrogen determination in the fermentation industry. V. Bermann. Mikrochemie 2, 169-73 (1924).

A modified Kjeldahl method for the determination of the nitrogen content of yeast. L. M. Christensen and E. I. Fulmer. Plant Physiol. 2, 455-60 (1927).

Determination of nitrogen in yeast and molasses. M. S. Filosofov. Nauch. Zapiski Sakhar. Prom. 7, 185-7 (1928); Chem. Abstr. 23, 2781-2 (1929).

Determination of the total nitrogen in yeast. R. S. W. Thorne.
J. Inst. Brewing 38, 23-9 (1932).

The determination of nitrogen in yeast by the hydrogenation method.
H. ter Meulen and K. Perken. J. Inst. Brewing 38, 330-1 (1932).

Résumé of experiments on the estimation of nitrogen in yeast.
A. E. Case and W. J. Price. J. Inst. Brewing 39, 35-6 (1933).

Estimation of nitrogen in yeast and brewing materials. J. S. Ford,
A. Tait, L. Fletcher, J. Spiers and W. J. Mitchell. J. Inst. Brewing
39, 472-86 (1933).

The micro-Kjeldahl method for determining the total nitrogen in yeast.
M. Sobotka. Mikrochemie 19, 818-8 (1936).

Quick method for the estimation of nitrogen according to Kjeldahl.
B. Drews. Z. Spiritusind. 60, 175-6 (1937).

Nitrogen determinations in compressed yeast. E. Hackländer and W.
Zeidler. Brenneri Ztg. 55, 5-6 (1938); Chem. Abstr. 32, 3899 (1938).

Nitrogenous Nutrients for Growing

The influence of the chemical constitution of nitrogenous food upon
the fermentative power of yeast. H. Pringsheim. Ber. 39, 4048-55
(1906).

On the nitrogenous nutrition of the yeast. H. Pringsheim. Biochem.
Z. 3, 121-286 (1907).

Can betaine serve as a nitrogenous nutrient for yeast? V. Stanek
and O. Miskovsky. Z. Zuckerind. Böhmen 32, 583-6 (1908); Chem. Abstr.
2, 2839 (1908).

Yeast which assimilates atmospheric nitrogen: Torula wiesneri.
H. Zickes. Sitzber. Akad. Wiss. Wien., math. nat., Abt. I, 118,
1091-1134 (1909).

Nitrogen fixation by yeasts and other fungi. Charles B. Lipman.
J. Biol. Chem. 10, 169-82 (1911).

The assimilable nitrogen in wort and its relationship to yeast and
fermentation. F. Schonfeld. Wochschr. Brau. 31, 197-9 (1913).

Nitrogen nutrition of compressed yeast. H. J. Waterman. Folia Mikrobiol. 2, 173-9 (1913).

Assimilation of urea by yeasts and molds. P. Lindner and G. Wüst. Wochschr. Brau. 30, 477-9 (1913).

Question of the assimilation of elementary nitrogen by yeasts and mold fungi. A. Kassowicz. Biochem. Z. 64, 82-5 (1914).

Absorption of ammonia by living yeast. Th. Bokorny. Allg. Brauer-Hopfen-Ztg. 54, 97. (1914); Chem. Abstr. 8, 2178 (1914).

Behavior of yeasts and molds towards nitrates. A. Kossowicz. Biochem. Z. 67, 400-19 (1914).

Fixation of elementary nitrogen by Saccharomycetes (yeasts) and molds. II. A. Kossowicz. Z. Garungsphysiol. 5, 26-32 (1914).

Synthesis of albumin from the nitrogen of ammonia by means of yeast. Anon. Chem. Ztg. 39, 325, 601-4, 621-2 (1915).

A new method of yeast production from sugar and mineral salts. A. Marbach. Osterr. Chem. Ztg. (n.s.) 18, 62-3 (1915).

Sources of nitrogen of yeast. Th. Bokorny. Chem. Ztg. 40, 366-8 (1916).

The vegetation of yeasts and molds on heterocyclic nitrogen compounds and alkaloids. F. Ehrlich. Biochem. Z. 79, 152-6 (1917).

The utilization of ammonium chloride by yeast. C. H. Hoffman. J. Ind. Eng. Chem. 9, 148-51 (1917).

Nitrogen nutrition of yeast. F. K. Swoboda. J. Biol. Chem. 52, 91-109 (1922).

Diastatic solution and degradation of nitrogenous material in maize; application to the manufacture of yeast. P. Nottin. Compt. rend. 174, 712-4 (1922).

Utilization of atmospheric nitrogen by Saccharomyces cerevisiae. E. I. Fulmer. Science (n.s.) 57, 645-6 (1923).

Nitrates in the life of yeast. S. Nicolau. Ann. brasserie dist. 227, 49, 65, 81, 97 (1924).

Influence of nitrates on yeast. A. Fernbach and S. Nicolau. Ann. brasserie dist. 22, 305, 321 (1924).

Assimilation and excretion of ammoniacal nitrogen by yeast. A. Fernbach and D. Triandafil. Compt. rend. soc. biol. 90, 912-4 (1924).

Influence of various nitrogenous substances on fermentation. P. Petit and J. Raux. Petit J. brasseur 32, 359 (1924); Chem. Abstr. 18, 2781 (1924).

The effect of ammonium salts upon the swelling of colloids and upon the growth of yeast at various temperatures. E. I. Fulmer. Colloid Symp. Monog. 2, 204-8 (1925).

Nitrogen equilibrium in yeast cells. H. v. Euler and H. Fink. Z. physiol. Chem. 157, 222-62 (1926).

The assimilability of the nitrogen of the nutrients used in growing yeast by the aeration method. H. Claassen. Z. angew. Chem. 39, 880-3 (1926); Ibid. 443-7.

Inaptitude of yeasts to utilize nitrogen under the form of the 2,5-dihydroxypiperazinic nucleus. A. Morel and I. Bay. Compt. rend. soc. biol. 96, 289-90 (1927).

L-Glutimic acid as nitrogenous substrate for yeasts. A. Dolinek. Z. Zuckerind. Czechoslovak. Rep. 52, 35-42 (1927); Chem. Abstr. 22, 1870 (1928).

Movement of nitrogen in the yeast mash. M. L. Filbsofov and B. K. Shtaub. Nauch. Zapiski Sakhar. Prom. 5, 193-200 (1927).

The nutrition of yeast with organic nitrogen-containing substances and ammonium salts in the aeration process. H. Claassen. Chem. Ztg. 51, 942-3 (1927).

The substitution of malt sprouts by ammonium salts in the manufacture of yeast. H. Claassen. Z. angew. Chem. 41, 1161-3 (1928).

Nitrogenous constituents of wort assimilable by yeast. W. Windisch, P. Kolbach and E. Hennecke. Wochschr. Brau. 45, 389-93, 399-406, 409-15, 421-6, 431-5 (1928).

The nutrition of yeast with organic nitrogen-containing substances and ammonium salts in the aeration process. A. Wohl. Chem. Ztg. 52, 202-3 (1928).

The growing of yeast with media containing nitrogen and ammonium salts by the aeration method. II. A. Wohl. Chem. Ztg. 52, 498 (1928).

The growing yeast with organic and inorganic nitrogen. H. Claassen. Chem. Ztg. 52, 497 (1928)

The chemistry of the proteins and its importance in brewing. S. B. Schryver. J. Inst. Brewing 35, 532-40 (1929)

The Institute of Brewing Research Scheme. The nitrogenous constituents of wort and their assimilation by yeast. Detailed account of the methods used for estimating various forms of nitrogen in malt wort. S. B. Schryver and E. M. Thomas. J. Inst. Brewing 35, 571-6 (1929)

The nitrogenous requirements of yeast. A.A.D. Comrie. J. Inst. Brewing 35, 541-7 (1929).

The nourishment of compressed yeast with inorganic ammonium compounds. W. Stach. Z. angew. Chem. 42, 842-3 (1929)

Influence of starvation (complete starvation and nitrogen starvation) on the proportion of proteins and of purines in microorganisms. E. F. Ferroine and F. Szucs. Ann. physiol. physicochim. biol. 6, 157-77 (1930).

The reducing power of fermenting yeast in relation to the source of nitrogen. K. Pirschle and H. Mengdehl. Biochem. Z. 225, 151-76 (1930).

Action of decolorizing blacks on the yield of aero-yeast from molasses. L. Nicolini. Giorn. biol. applicata ind. chim. 1, 104-19 (1931); Chem. Abstr. 26, 1704 (1932).

The influence of the nitrogenous part of the culture medium on the sporulation of six species of yeast. W. Ochmann. Zentr. Bakt. Parasitenk., Abt. II, 86, 458-65 (1932).

Influence of nitrogen of different origins upon the yield and quality of yeast grown by the aeration process. H. Claassen. Angew. Chem. 45, 80-4 (1932).

Utilization of organic nitrogen by highly aerated yeasts (in the molasses feed method of yeast manufacture). A. G. Khomich and E. V. Doinikova. Schrift. zentr. biochem. Forsch. Inst. Nahr-Genussmittelind. U.S.S.R. 3, 85-109 (1933); Chem. Abstr. 28, 1463 (1934).

The influence of various amino acids on the alcoholic fermentation of brewers' yeast. Y. Tozawa and J. Horimi. *Folia Pharmacol. Japon.* 17, No. 1, 87-96 (Breviaria 5-6)(1933).

Use of bone glue as a source of nitrogen in yeast production. W. Scherman. *Bull. assoc. chim. suc. dist.* 51, 504-10 (1934).

Yeast and nitrogenous constituents. P. Petit. *Brasserie et malterie* 24, 81-5 (1934); *Chem. Abstr.* 28, 5174 (1934).

Sources of nitrogen for the nutrition of yeast. H. Fringsheim and H. Borchardt. *Bull. soc. chim. biol.* 16, 743-8 (1934).

Ammonium persulfate as a catalyst of fermentation by Saccharomyces cerevisiae. E. Caseno. *Boll. ist. sieroterap. milan.* 14, 475-7 (1935).

Ability of yeast to assimilate higher- and lower- molecular nitrogen compounds. N. Nielsen. *Compt. rend. trav. lab. Carlsberg*, 21, *physiol.*, 139-50 (1935).

Investigations of the yeast-assimilable nitrogen content of beer wort. N. Nielsen. *Compt. rend. trav. lab. Carlsberg* 21, *physiol.*, 113-38 (1935).

Nitrogen in relation to yeast. R. S. W. Thorne. *J. Inc. Brewers' Guild* 22, *Exhib. Suppl.*, No. 264, 59-63 (1936).

Nitrogen assimilation by yeast. V. The ability of yeast to secrete coagulable nitrogen. N. Nielsen. *Compt. rend. trav. lab. Carlsberg*, 21, *physiol.*, 205-18 (1936); VI. Assimilation of the formol titratable nitrogen compounds of beer wort. N. Nielsen and A. Lund. *Ibid.* 239-46; VII. Amino acids. N. Nielsen. *Ibid.* 395-424.

Excretion of nitrogen by yeast during growth. N. Nielsen and V. Hartelius. *Wochschr. Brau.* 54, 129-31, 137-41 (1937).

Studies on the cultivation of bakers' yeast by the mass and aeration procedures. III. The influence of increased amounts of nitrogen and phosphoric acid on the yield and quality of the yeast. R. Pfundt. *Biochem. Z.* 294, 300-6 (1937).

The question of the nitrogen nutrition of yeast. I. P. Zakharov, S. A. Konovalov and F. M. Kinsburskaya. *Mikrobiologiya* 7, 643-59 (1938).

Comparative studies on the value of amino acids as a source of nitrogen for yeast. V. Hartelius. Biochem. Z. 299, 317-33 (1938).

The nitrogen assimilation of yeast. R. Illies. Wochschr. Brau. 55, 405-8, 413-16 (1938).

The effect of yeast on arginine and histidine. S. Edlbacher and A. v. Segesser. Naturwissenschaften 26, 267 (1938).

The action of yeast on arginine and histidine. S. Edlbacher, M. Becker and A. v. Segesser. Z. physiol. Chem. 255, 53-6 (1938).

Nitrogen assimilation of yeast. IX. Nitrogen liberation of yeast at lower temperature. N. Nielsen and V. Hartelius. Compt. rend. trav. lab. Carlsberg, 22, physiol., 195-202 (1938); X. Amino acids. I. Compt. rend. trav. lab. Carlsberg 22, chim., 384-39 (1938)(in German); XI. Influence of bios and of metabolism products on nitrogen absorption and liberation. V. Hartelius. Compt. rend. trav. lab. Carlsberg, 22, physiol., 211-34 (1938).

The assimilation of elementary nitrogen of the air by pellicle-forming yeast Cladosporium cells. H. Schänderl. Zentr. Bakt. Parasitenk., Abt. II, 101, 401-8 (1940).

Assimilation of ammonia by bakers' yeast under aerobic and anaerobic conditions. J. Runnström, K. Brandt and R. Marcuse. Arkiv Kemi Mineral. Geol. 14B, No. 8, 5pp (1940).

Elementary atmospheric nitrogen in the nitrogen economy of yeast. H. Schänderl. Wochschr. Brau. 59, 59-61 (1942).

PATENTS

Adhesives and Plastics

Brit. Pat. 313,101, Jan. 5, 1928. Adhesives prepared from yeast. I. G. Farbenind. A. G.

Brit. Pat. 328,197, Dec. 22, 1928. Adhesives prepared from yeast. I. G. Farbenind. A. G.

Brit. Pat. 328, 645, Jan. 30, 1929. Adhesives from yeast. I. G. Farbenind. A. G.

Brit. Pat. 530,790, Dec. 29, 1940. Adhesive from yeast. Agricultural and Chemical Products Ltd. and J. Guttmann.

Ger. Pat. 224,443, Sept. 1, 1909. Adhesive from yeast. C. Beyer.

Ger. Pat. 289,597, Feb. 13, 1915. Plastic from yeast. H. Blücher and E. Krause.

Ger. Pat. 476,031, July 20, 1926. Plastic mass from yeast. F. Stein.

U. S. Pat. 1,317,721. Plastic mixtures. W. Mooser-Schiess.

U. S. Pat. 1,367,886. Plastic compositions formed with yeast. W. Mooser-Schiess.

Aeration Process

Australian Pat. 24,919 to 24,935. Yeast. F. G. Walter.

Austrian Pat. 3,665, April 30, 1913. Yeast. Hamburger & Co.

Austrian Pat. 70,615, Dec. 10, 1915. Removing fermentation scum during air-yeast manufacture. R. Reik.

Austrian Pat. 70,639, Dec. 10, 1915. Removing fermentation scum during air-yeast manufacture. F. Wulf Akt-Ges.

Austrian Pat. 119,946, Mar. 15, 1930. Yeast M. Fischl's Söhne and F. Rosenberg.

Austrian Pat. 130,438, Dec. 15, 1930. Yeast. Vereinigte Mautner-Markhof'sche Presshefe Fabriken and Presshefefabrikation.

Austrian Pat. 135,538, Nov. 23, 1933. Yeast. O. Hummer

Bit. Pat. 148, 373, July 9, 1920. Yeast. Fleischmann Co.

Brit. Pat. 153,667, Aug. 11, 1919. Yeast; alcohol. Aktieselskabet Dansk Gaerings Industri & S. Sak.

Brit. Pat. 192,085, Jan. 18, 1923. Yeast. International Yeast Co., Ltd.

Brit. Pat. 207,546, Nov. 23, 1923. Yeast. C. Langemeyer.

Brit. Pat. 238,554, Aug. 16, 1924. Yeast. International Yeast Co.

Brit. Pat. 291,127, May 3, 1927. Yeast. H. C. Jansen and J. P. H. Jansen

- Brit. Pat. 230,098, Mar. 1, 1924. Yeast. J. Weber.
- Brit. Pat. 346,361, Dec. 18, 1928. Yeast. A. Braun, J. Fischl and E. Fischl (trading as Fischl's Söhne).
- Brit. Pat. 357,541, June 19, 1930. Yeast. H. J. Jansen and H. C. Jansen.
- Brit. Pat. 361,026, Sept. 5, 1930. Yeast culture. Vitamin Food Co., Inc.
- Brit. Pat. 376,038, July 28, 1931. Yeast. Invention Verwaltung Verwertung Chem-Tech. Pat. G.m.b.H and I. C. Daranyi.
- Brit. Pat. 414,117, July 30, 1934. Yeast. Industrikemiska Aktiebolaget.
- Brit. Pat. 423,331, Jan. 30, 1935. Yeast. Norddeutsche Hefeindustrie A. G.
- Brit. Pat. 430,348, June 11, 1935. Aerating liquids. W. Vogelbusch.
- Brit. Pat. 431,566, July 11, 1935. Aerating devices, especially suitable for use in yeast fermentation vats. W. Vogelbusch.
- Brit. Pat. 469,058, July 19, 1937. Destroying froth. J. O. Naucier.
- Can. Pat. 258,458, March 2, 1926. Yeast. R. Hamburger, S. Kaesz and F. Hartig.
- Can. Pat. 343,630, July 31, 1934. Yeast. A. Schultz (to Standard Brands, Inc.).
- Can. Pat. 361,391, Oct. 27, 1936. Propagation of yeast. A. Braash (to Standard Brands, Inc.).
- Can. Pat. 371,677, Feb. 1, 1938. Yeast production. E. Stich (to Standard Brands, Inc.).
- Dutch Pat. 22,653, Sept. 15, 1930. Preparation of air yeast and other microbiological processes employing the passage of gas through the entire medium. H. C. Jansen.
- Fr. Pat. 686,784, Dec. 17, 1929. Yeast. M. Fischl's Söhne and F. Rosenberg.
- Fr. Pat. 709,948, Jan. 26, 1931. Yeast. E. Stich.

Fr. Pat. 748,594, July 16, 1933. Yeast. H. Braasch and A. Braasch.

Fr. Pat. 750,158, Aug. 5, 1933. Yeast. H. Braasch and A. Braasch.

Fr. Pat. 766,505, June 29, 1934. Yeast. N. V. Industriele Maatschappij v. h. Nouri and Van der Lande.

Fr. Pat. 782,281, June 1, 1935. Yeast. S. Jansen.

Fr. Pat. 784,127, July 22, 1935. Yeast. I. A. Effront and A. Popper.

Ger. Pat. 275,432, May 30, 1912. Yeast. Radiotechnische Studienges.

Ger. Pat. 276,604, Oct. 3, 1912. Removing fermentation foam in air yeast manufacture. F. Wulf.

Ger. Pat. 499,506, May 27, 1926. Yeast. The International Yeast Co., Ltd.

Ger. Pat. 590,550, Jan. 5, 1934. Yeast and spirits. Nordd. Hefeind. A. G.

Ger. Pat. 624,101, Jan. 13, 1936. Cultivating yeast, bacteria and other microorganisms. A. W. Müller.

Ger. Pat. 655,729, Jan. 21, 1938. Yeast. H. Braasch and A. Braasch.

Ger. Pat. 657,718, Mar. 11, 1938. Yeast. Hefe-Patent G. m. b. H.

Ger. Pat. 700,492, Nov. 21, 1940. Adding ozone to fermentation vats. C. Dorda (to Hefe-Patents G. m. b. H.).

Hung. Pat. 100,910, Mar. 22, 1929. Yeast with high enzyme activity. M. Moskovits and Krausz-Moskovits, Ltd.

Swed. Pat. 91,803, Mar. 24, 1938. Preparation of yeast. Svenska Jästfabriks Aktiebolaget (S. O. Rosenqvist, inventor).

U. S. Pat. 1,449,102. Yeast. F. Hayduck

U.S. Pat. 1,449,127. Yeast production from molasses. M. Nilsson and N. S. Harrison.

- U. S. 1,575,761. Yeast. C. Hoffman, N. M. Cregor and H. D. Gribsby.
- U. S. Pat. 1,673,735. Yeast. R. L. Corby and W. H. F. Bührig
(to The Fleischmann Co.)
- U. S. Pat. 1,718,910. Yeast. L. Lavedan.
- U. S. Pat. 1,722,858. Yeast production. F. Ranschoff (to The
Fleischmann Co.)
- U. S. Pat. 1,732,921. Aerobic fermentation. G. S. Bratton (to
Anheuser-Busch, Inc.)
- U. S. Pat. 1,761,789. Continuous yeast manufacture with aeration.
A. P. Harrison (to Standard Brands, Inc.)
- U. S. Pat. 1,818,530. Yeast. A. Boye.
- U. S. Pat. 1,962,631. Regenerating yeast to give it high enzymic
activity. M. Moskovits.
- U. S. Pat. 2,104,330. Device for introducing gases into liquids as
in yeast production with aeration. J. Lockey (to Standard Brands, Inc.)
- U. S. Pat. 2,118,370. Yeast production and fermentation processes
involving aeration. K. A. Wessblad, H. E. A. Goth and J. O. Naucner
(to Industrikemiska Aktiebolaget).
- U. S. Pat. 2,119,188. Aeration in yeast propagation. B. L. M. van der
Lande and E. von Thiel (to N. V. Industriele Maatschappij voorheen
Noury & van der Lande).
- U. S. Pat. 2,121,458. Apparatus for aerating wort in yeast production.
W. Vogelbusch.
- U. S. Pat. 2,162,217. Yeast. J. Hilbers.
- U. S. Pat. 2,183,570. Yeast. R. R. Irvin and M. W. Mead, Jr.
- U. S. Pat. 1,201,062. Preparing yeast. L. Lavedan.

Apparatus for Production

Australian Pat. 17,049 to 17,134. Apparatus for aerating and emulsifying yeast for the manufacture of bread. Brown and Kidd Ltd.

Austrian Pat. 123,393, Feb. 15, 1931. Apparatus for aerating fermenting worts, especially for pressed yeast manufacture. W. Vogelbusch.

Austrian Pat. 128,825, Feb. 15, 1932. Means for aerating worts in the manufacture of yeast. W. Vogelbusch.

Austrian Pat. 136,969, Mar. 26, 1934. Apparatus for aerating fermentation vats for yeast manufacture. W. Vogelbusch.

Austrian Pat. 148,020, Dec. 10, 1936. Yeast. W. Vogelbusch.

Belg. Pat. 438,453, Mar. 27, 1940. A container for mother yeast. F. de Clerq.

Brit. Pat. 23,795, Dec. 9, 1914. Collecting yeast during fermentation. W. Scott.

Brit. Pat. 26,773, Nov. 17, 1910. Apparatus for the cultivation of bacteria and yeasts. M. Cohendy.

Brit. Pat. 124,237, Jan. 21, 1918. Cultivating yeast, bacteria, etc. J. H. P. Magne.

Brit. Pat. 144,244, Nov. 18, 1919. Yeast; alcohol. A. Meyer.

Brit. Pat. 242,114, Jan. 5, 1925. Apparatus for separating yeast from associated liquid in vats. W. Scott.

Brit. Pat. 254,020, Mar. 27, 1925. Air pressure apparatus for spraying fruit juice, milk, blood, yeast, etc. P. Muller.

Brit. Pat. 271,777 April 26, 1926. Yeast. Hansena, Akt. Ges. and L. Nathan.

Brit. Pat. 366,753, Sept. 9, 1931. Yeast and alcohol. S. Jansen.

Brit. Pat. 400,799, Nov. 2, 1933. Extrusion press, particularly for extruding yeast. G. Dwars.

Brit. Pat. 404,242, Jan. 11, 1934. Centrifugal separator drum, particularly for use in the manufacture of yeast. Ramesohl and Schmidt A. G.

Brit. Pat. 448,689, June 12, 1936. Yeast; fermentation processes. H. Scholler and R. Eickemeyer.

Brit. Pat. 451,062, July 29, 1936. Apparatus and process for fermenting and aerating liquids. I. A. Effront and A. Popper.

Brit. Pat. 461,439, Feb. 17, 1937. Device for dispersing a gas or vapor in a liquid, particularly for application to fermenters used in the manufacture of yeast on the aeration principle. The Distillers Co. Ltd. and J. Lockey.

Brit. Pat. 469,300, July 22, 1937. Alcohol; yeast. N. V. Internationale Suiker en alcohol Compagnie (International Sugar and Alcohol Co. "Isaco").

Brit. Pat. 474,285, Oct. 25, 1937. Apparatus for delivering measured quantities of liquids, particularly water for yeast mixtures and saline solutions used in bread making. L. S. Harber, J. F. Wilson and Baker Perkins Ltd.

Brit. Pat. 481,294, Mar. 21, 1938. Separating biologically valuable constituents from blood, yeast, bacteria, plant cell material, etc. M. G. Sevag.

Brit. Pat. 494,946, Oct. 31, 1938. Apparatus for drying yeast, glandular substance, etc. F. H. Cook.

Brit. Pat. 503,307, Apr. 4, 1939. Separating yeast by centrifugal action. Aktiebolaget Separator.

Brit. Pat. 509,745, July 20, 1939. Yeast. E. Stich and E. Kottlors.

Brit. Pat. 539,541, Sept. 16, 1941. Separating yeast from suspensions. Koninklijke Industriele Maatschappij voorheen Noury and van der Lande N. V.

Brit. Pat. 517,351, Jan. 26, 1940. Treating yeast suspensions. Svenska Jästfabriko Aktiebolaget.

Fr. Pat. 642,019, Oct. 6, 1927. Yeast. A. Boye.

Fr. Pat. 696,094, May 26, 1930. Yeast. Aktiebolaget Separator.

Fr. Pat. 705,807, Nov. 17, 1930. Fermentation processes. R. Horch.

Fr. Pat. 715,700, April 20, 1931. Centrifuge for separating yeast from wort. Aktiebolaget Separator.

Fr. Pat. 757,294, Dec. 22, 1933. Separating drums for yeast. Aktiebolaget Separator.

Fr. Pat. 764,873, May 29, 1934. Yeast. Maschinenbau-A. G. Golzern-Grimma.

Fr. Pat. 784,585, July 22, 1935. Apparatus for determining the fermenting power of yeast in dough. Brabender G. m. b. H.

Fr. Pat. 791,430, Dec. 11, 1935. Purifying molasses. Aktiebolaget Separator.

Fr. Pat. 800,109, June 27, 1936. Apparatus for aerating fermenting liquids for the production of yeast. N. V. Industriele Maatschappij v. Noury and v. d. Lande.

Fr. Pat. 821,326, Dec. 2, 1937. Apparatus for fermenting solutions. H. Scholler.

Ger. Pat. 244,831, Mar. 11, 1911. Apparatus for measuring yeast, soap, and like goods made up in lengths, by means of a cutting device. H. Hoopfener.

Ger. Pat. 245, 54, Apr. 6, 1911. Process and apparatus for separating yeast from fermented beer wort by centrifugation. C. Bauer.

Ger. Pat. 248,088, Nov. 12, 1911. Device for removing the yeast from the fermentation vats. K. Fuk.

Ger. Pat. 273,806, Feb. 25, 1913. Centrifuge for purifying yeast. J. Hofbauer.

Ger. Pat. 493,018, Feb. 10, 1928. Centrifuge for yeast. Ramesöl & Schmidt A. G.

Ger. Pat. 495,785, Dec. 29, 1928. Device for skimming off the top yeast during fermentation. G. Jakob.

Ger. Pat. 507,401, Feb. 22, 1929. Method and apparatus for sifting and sorting yeast. Brauerei Sternburg G. m. b. H.

Ger. Pat. 521,274, Sept. 27, 1928. Apparatus for washing yeast.
E. Muller.

Ger. Pat. 524,549, Mar. 17, 1928. Apparatus for washing yeast with water. A. Hallermann.

Ger. Pat. 528,981, Apr. 19, 1925. Device for regenerating barm for further fermentation. Hansena A. G.

Ger. Pat. 534,108, Sept. 20, 1927. Yeast. A. Boye.

Ger. Pat. 547,078, June 19, 1929. Apparatus for recovering beer yeast. O. Koch.

Ger. Pat. 557,965 and 557,966. Fermenting plant for pure yeast. Possehl's Apparatenbau und Export G. m. b. H. and E. Stolle.

Ger. Pat. 559,138, June 20, 1930. Centrifuge for yeast. Ramesohl & Schmidt A. G.

Ger. Pat. 571,204, Nov. 22, 1929. Apparatus for producing purified yeast autolyzates. H. van de Landt.

Ger. Pat. 603,668, Oct. 5, 1934. Molasses. M. Fischl's Söhne and F. Rosenberg.

Ger. Pat. 619,555, Oct. 3, 1935. Yeast. Wirtschaftliche Vereinigung der deutschen Hefeindustrie.

Ger. Pat. 621,566, Nov. 9, 1935. Yeast. Norddeutsche Hefeindustrie A. G.

Ger. Pat. 624,990, Feb. 1, 1936. Yeast. Brabender Elektromaschinen G. m. b. H.

Ger. Pat. 629,194, April 24, 1936. Apparatus for aerating mash used in cultivating yeast. Maschinenbau A. G. Golzern Grimma.

Ger. Pat. 637,728, Nov. 3, 1936. Apparatus for making yeast. Svenska Jästfabriks Aktiebolaget.

Ger. Pat. 646,227, June 10, 1937. Means for cleaning centrifuges for yeast and like material. Bergedorfer Eisenwerk A. G.-Astra-Werke.

Ger. Pat. 659,333, Apr. 30, 1938. Alcohol and yeast by fermentation. Deutsche Bergin A. G. für Holzhydrolyse, F. Berguis, H. Koch and H. Zimmermann.

Ger. Pat. 716,927, Jan. 8, 1942. Apparatus for making pressed yeast from molasses. Rameschl & Schmidt L. G. Addn. to Ger. Pat. 688,764.

Swed. Pat. 58,961, June 25, 1925. Filtering vessel for yeast manufacture. Svenska Jästfabriks Aktiebolaget.

Swed. Pat. 70,538, Oct. 28, 1930. Device on yeast centrifuges for introducing the washing liquid. Aktiebolaget Separator (H. O. Lindgren, inventor).

Swed. Pat. 77,912, Aug. 1, 1933. Apparatus for yeast fermentation. Svenska Jästfabriks A. B. (N. R. Nilsson, inventor).

Swed. Pat. 79,024, Nov. 28, 1933. Centrifuge for the separation and washing of yeast. Aktiebolaget Separator (S. A. B. Dahlgren, inventor).

Swed. Pat. 88,558, Feb. 23, 1937. Yeast. Svenska Jästfabriks Aktiebolaget (S. O. Rosenqvist, inventor).

Swed. Pat. 89,806, July 27, 1937. Yeast fermentation process. Svenska Jästfabriks Aktiebolaget (N. R. Normander, inventor).

U. S. Pat. 1,020,716. Apparatus for washing and aerating yeast. F. Schimper.

U. S. Pat. 1,060,143. Apparatus for mixing definite proportions of yeast with accelerating material such as sugar or malt extract. J. A. Stevenson.

U. S. Pat. 1,212,656. Apparatus for cultivating yeast, mucorini, molds and bacilli. J. H. P. Magne.

U. S. Pat. 1,402,248. Fermenting tank adapted for yeast production. W. H. Noe.

U. S. Pat. 1,760,706. Apparatus for obtaining yeast as a by-product in alcohol production by fermentation. O. Lukrs (to Zellstofffabrik Waldof).

U. S. Pat. 1,792,450. Fermenting sacchariferous liquids. E. Stich.

U. S. Pat. 1,817,232. Temperature regulation of contents of yeast propagation vats, etc. H. F. Buhrig (to Standard Brands, Inc.).

U. S. Pat. 1,885,831. Separating rubber from latex by a direct electric current. K. Illig and N. Schoenfeldt (to Siemens-Elektro-Osmose G. m. b. H.).

U. S. Pat. 1,959,554. Apparatus for aerating liquids, as in yeast production. E. Stich.

U. S. Pat. 1,984,789. Controlling froth or foam accumulation of liquids (as in yeast manufacture). J. Everett (to Standard Brands, Inc.).

U. S. Pat. 2,033,326. Impregnating beer wort with yeast. W. F. Clark.

U. S. Pat. 2,038,451. Device for aerating liquids as in yeast propagation. E. Schattaneck.

U. S. Pat. 2,043,940. Apparatus for yeast propagation with aeration. E. van Thiel (to N. V. Industriele Maatschappij v.h. Noury and v.d. Lande).

U. S. Pat. 2,070,966. Bowl for centrifugal yeast separators. N. E. Svensjo. (to De Laval Separator Co.).

U. S. Pat. 2,092,151. Yeast propagation with aeration. A. Braasch (to Standard Brands Inc.).

U. S. Pat. reissue 21,723. Apparatus for continuous pressure separation of yeast or other solids from liquids. R. M. Thompson (to Thompson Continuously Operating Filter Press Co.). A reissue of original patent U. S. 2,112, 869.

U. S. Pat. 2,118,117. Separating biologically valuable constituents from blood, yeast, bacteria, plant cell material, etc. M. G. Sevag.

U. S. Pat. 2,123,463. Apparatus for yeast manufacture. I. A. Effront.

U. S. Pat. 2,151,126. Aeration apparatus suitable for use in yeast manufacture. J. Locky (to Standard Brands, Inc.).

U. S. Pat. 2,153,581. Centrifugal filter and separator for use in the manufacture of food extract from brewers' yeast. J. H. Millar (to Arthur Guinness, Son & Co., Ltd.).

U. S. Pat. 2,176,558. Device for aerating liquids, as in yeast manufacture. J. Lockey (to Standard Brands, Inc.).

U. S. 2,184,195. Apparatus for destroying froth developed in yeast manufacture or other processes. J. O. Naucier.

U. S. Pat. 2,188,192. Yeast production and fermentation. H. Scholler and M. Seidel.

U. S. Pat. 2,206,633. Dispersion mill suitable for use with pigments, yeast, etc. M. W. Ditto. (to Emulsions Process Corp.).

U. S. Pat. 2,232,737. Recovery of volatile substances from spent air such as that from yeast culture. M. Seidel.

U. S. Pat. 2,301,461. Yeast emulsifier suitable for use in preparing bread doughs. E. O. Schnetz.

U. S. Pat. 2,306,074. Rotary-drum filtration apparatus suitable for yeast separation and recovery from liquid suspensions. E. A. Meyer (to Standard Brands, Inc.).

U. S. Pat. 2,281,457. Apparatus for manufacturing yeast. S. O. Rosenqvist (to Svenska Jastfabriks Aktiebolaget).

U. S. Pat. 2,319,831. Treatment of yeast, as for the extraction of vitamins. W. P. Torrington (to Emulsions Process Corp.).

U. S. Pat. 2,351,970. Separation of yeast such as freshly made bakers' yeast from aqueous suspensions by use of a centrifugal filter. M. P. J. M. Jansen

Baking

Austrian Pat. 144,832, Bread. "Salvis" A. G. f. Nahrungsmittel Chem. Ind. (R. Bertel, inventor).

Brit. Pat. 989, Jan. 12, 1912. Bakers' yeast from brewers' or other yeast. J. A. Stevenson.

Brit. Pat. 509,476, July 14, 1939. Baking yeast compositions. Compagnie internationale de procédés de panification Itam and Société Fould-Springer.

- Brit. Pat. 10,774, May 1, 1914. Yeast. P.L. Docherty.
- Fr. Pat. 723,515, Oct. 1, 1931. Yeast. K. Bergl.
- Fr. Pat. 781,220, May 11, 1935. Yeast. K. Dinich.
- U. S. Pat. 904,573. Liquid yeast mixture for bread. W. J. Temple.
- U. S. Pat. 1,151,526. Yeast saving composition for use in bread making. H. A. Kohman, C. Hoffman and T. M. Godfrey.
- U. S. Pat. 1,158,933. Economizing yeast in bread making. H. A. Kohman, C. Hoffman and A. E. Blake.
- U. S. Pat. 1,539,751. Testing yeast in making bread dough. H. J. Lueders.
- U. S. Pat. 1,701,200. Yeast preparation. R. Willstätter and H. Sabotka.
- U. S. Pat. 1,801,095. Preservable yeast preparation. E. I. Levin.
- U. S. Pat. 1,894,135. Yeast preparation. G. Torök and G. Becze.
- U. S. Pat. 2,187,357. Baking-yeast compositions. J. C. Matti (to Compagnie internationale de procédés de panification "Itam").

Beer Yeast

- Austrian Pat. 9,697, Nov. 23, 1912. Improving beer yeast. A. Nydrle and G. Koth.
- Brit. Pat. 11,424, May 11, 1911. Purifying brewers' yeast. G. Erdmann and T. Schmuck.
- Brit. Pat. 13,811, June 30, 1908. Recovery of brewers' yeast. W. Hampton.
- Brit. Pat. 106,531, May 25, 1916. Yeast. J. A. Stevenson.
- Brit. Pat. 113,486, Feb. 23, 1917. Yeast. J. A. Stevenson.
- Brit. Pat. 318,155, Aug. 28, 1928. Yeast. H. Ohlhaver.
- Brit. Pat. 357,732, Sept. 13, 1929. Vitamins. H. Van de Sandt.

Brit. Pat. 434,249, Aug. 28, 1935. Baking yeast. K. Dinich.

Can. Pat. 147,402, Apr. 15, 1913. Process of transforming brewers' yeast into a product equivalent to compressed alcoholic yeast.

A. Nydrle.

Fr. Pat. 680,847, Aug. 27, 1929. Baking yeast. H. Ohlhaver.

Ger. Pat. 245,038, July 2, 1910. Removing bitter principle from beer yeast. Verein "Versuch-und Lehranstalt fur Brauerei."

Ger. Pat. 248,561, Nov. 10, 1910. Removing bitter principle from beer yeast. Versuche-und Lehranstalt fur Brauerei.

Ger. Pat. 536,061, Nov. 7, 1929. Beer Yeast. H. Windesheim

Ger. Pat. 630,139, Aug. 8, 1936. Treatment of brewery yeast. A. Kroulik.

Hung. Pat. 111,224, Dec. 1, 1934. Baking yeast from beer yeast. K. Dinich. Addn. to Hung. Pat. 109,962.

U. S. Pat. 1,045,689. Cleaning beer yeast. G. Erdmann.

U. S. Pat. 1,213,545. Protein from yeast. C. C. Ringler and J. Beerhalter.

U. S. Pat. 1,517,650. Treating yeast used in brewing. E. Moufang.

Compressed Yeast

Austrian Pat. 2,544-10, Oct. 10, 1910. Compressed yeast. R. Goldschmidt and K. Kruis.

Austrian Pat. 121,078, Aug. 15, 1930. Yeast fermentations. E. Reinisch.

Austrian Pat. 146,730, Aug. 10, 1936. Yeast. Vereinigte Mautner Markhof'she Presshefe Fabriken and Armi Szilvinyi.

Brit. Pat. 4,637 (?), Dec. 9, 1914. Yeast. W. Scott.

Brit. Pat. 7,272, Mar. 25, 1912. A process for the manufacture of compressed yeast from raw yeast. J. A. Liebert.

Brit. Pat. 149,533, Sept. 5, 1919. Yeast. H. W. Anderschou.

Brit. Pat. 262,063, Nov. 24, 1925. Preserving and packing yeast.
L. O. Lewton.

Brit. Pat. 405,875, Feb. 15, 1934. Purifying molasses for use in the manufacture of yeast. N. V. Industriele Maatschappij voorheen Noury and Van der Lande.

Brit. Pat. 406,398, Mar. 1, 1934. Preserving yeast. The International Yeast Co., Ltd. and H. B. Hutchinson.

Brit. Pat. 414,334, Aug. 2, 1934. Yeast. Ramesohl & Schmidt A. G.

Brit. Pat. 445,714, Yeast. Vereinigte Mautner Markhofsche Presshefe Fabriken and A. Szilvinyi.

Brit. Pat. 534,993. Mar. 25, 1941. Improving compressed yeast.
L. Elion.

Can. Pat. 360,241, Sept. 1, 1936. Preservation of yeast. H. B. Hutchinson (to Standard Brands, Inc.).

Danish Pat. 35,992, May 17, 1926. Potent preservable pressed yeast. Mellemeuropaeisk Patent-Financieringselskab.

Dutch Pat. 13,773, Oct. 15, 1925. Preparation of pressed yeast.
S. K. D. M. van Lier.

Fr. Pat. 751,602, Sept. 7, 1933. Baking yeasts. Pfeifer & Langen A. G.

Fr. Pat. 818,300, Sept. 22, 1937. Yeast. Aktieselskabet Dansk Gaerings-Industri.

Ger. Pat. 257,557, Aug. 5, 1911. Process of aerating the wort in compressed yeast manufacture. Ullrich & Hinrichs.

Ger. Pat. 269,192, Sept. 20, 1912. Compressed yeast. A. Kamienski.

Ger. Pat. 277,943, Sept. 7, 1913. Yeast. R. Reik.

Ger. Pat. 483,329, Dec. 19, 1926. Yeast. Norddeutsche Hefeindustrie A. G.

Ger. Pat. 570,932, Feb. 22, 1933. Yeast. W. Knappe.

Ger. Pat. 605,517, Feb. 5, 1935. Yeast. Pfeifer & Langen A. G. (H. Claassen and M. v. Lillienkschild, inventors).

Ger. Pat. 621,754, Nov. 13, 1935. Yeast. Pfeifer and Langen G.m.b.H. (H. Claassen and M. v. Lillienkschild inventors).

Ger. Pat. 641,753, Feb. 12, 1937. Pressed yeast. W. Knappe.

Ger. Pat. 656,598, Feb. 10, 1938. Pressed yeast. The International Yeast Co.

Ger. Pat. 658,348, Apr. 1, 1938. Yeast. Vereinigte Mautner Markhof'sche Presshefe Fabriken and A. Szilvinyi.

Hung. Pat. 102,894, July 29, 1929. Increasing the life of yeast. M. Moskovits and Krausz-Moskovits Egyesult Spartelek R. T.

Swed. Pat. 54,302, April 18, 1923. Pressed yeast. N. Hugoson.

Swiss Pat. 62,577, Sept. 18, 1912. Yeast. A. Fernbach.

Swiss Pat. 72,486, May 16, 1916. Pressed yeast. Verein der Spiritus-Fabrikanten in Deutschland.

U. S. Pat. 1,176,528. Pressed yeast. J. Effront and A. Boidin.

U. S. Pat. 1,580,500. Compressed yeast. R. Kusserow.

U. S. Pat. 1,893,152. Yeast of depressed zymatic activity. A. Schultz and C. N. Frey (to Standard Brands, Inc.).

U. S. Pat. 1,970,275. Compressed yeast product. W. H. Buhrig, A. Schultz and C. N. Frey (to Standard Brands, Inc.).

U. S. Pat. 1,980,083. Compressed yeast admixed with "sympiotically grown" Lactobacillus acidophilus. W. L. Owen (to Lacto-Yeast Co.)

U. S. Pat. 2,114,694. Yeast mixture. L. U. Wilhartz and M. M. Brooke. (to Puritan Mills, Inc.).

U. S. Pat. 2,136,399. Yeast treatment. A. S. Schultz and C. N. Frey (to Standard Brands, Inc.).

U. S. Pat. 2,196,361. Yeast, etc. P. Liebsny and H. Wertheim.

U. S. Pat. 2,218,336. Bakers' yeast production. V. R. Kokatnur (to Autoxygen Inc.).

Conditioning and Improving

- Austrian Pat. 112,464, Oct. 15, 1928. Treating yeast. E. Pribram and H. Wertheim.
- Brit. Pat. 226,534, Dec. 17, 1923. Activating and sterilizing yeast, etc. E. F. Rousseau.
- Brit. Pat. 291,135, Feb. 22, 1927. Yeast. W. Scott.
- Brit. Pat. 311,315, May 9, 1928. Yeast. E. I. Levin.
- Brit. Pat. 320,021, Sept. 28, 1928. Yeast. N. Maresu.
- Brit. Pat. 346,908, Mar. 4, 1929. Yeast. H. Claassen.
- Brit. Pat. 377,533, Nov. 12, 1931. Yeast fermentation. L. Elion and E. Elion.
- Fr. Pat. 450,988, Nov. 25, 1912. Improving yeast. Diamalt-Akt.-Ges.
- Fr. Pat. 650,891, Mar. 16, 1928. Yeast. Norddeutsche Hefeindustrie A. G.
- Fr. Pat. 682,945, Oct. 9, 1929. Yeast. L. Elion and E. Elion.
- Fr. Pat. 698,316, July 2, 1930. Yeasts. H. Windesheim and F. W. Thiele.
- Fr. Pat. 748,741, July 8, 1933. Yeast preparations. "Erste Hessische Press-Hefe Fabrik and Dampfbrennerei Inh. J. Peser Söhne."
- Fr. Pat. 769,020, Aug. 17, 1934. Bread making. H. Boulard.
- Ger. Pat. 254,592, Dec. 28, 1911. Increasing the power of yeast in fermentation. A. Pollak.
- Ger. Pat. 283,177, Oct. 31, 1913. "Removing the unpleasant taste from yeast. Versuchs-und Lehranstalt für Brauerei."
- Ger. Pat. 286,180, Apr. 25, 1914. Purifying yeast. P. Knoblauch.
- Ger. Pat. 528,257, Mar. 28, 1926. Yeast. W. Matzka.

Ger. Pat. 568,116, Dec. 4, 1928. Yeast. "Enosis" Soc. Anon. Comm.
Ind. Addition to Ger. Pat. 537,057.

Ger. Pat. 568,756, Nov. 26, 1929. After-treating yeast. M. Moskovits
and Kraus-Moskovits Egyesult etc.

Ger. Pat. 629,949, May 15, 1936. Fermenting. I. G. Farbenind. A. G.
(Gustav Weidenhagen, inventor).

Ger. Pat. 697,311, Sept. 12, 1940. Edible yeast. H. Fink and R.
Lechner (to Versuchs-und Lehranstalt für Spiritusfabriken).

U. S. Pat. 1,061,494. Increasing the power of yeast in fermentation.
A. Pollak.

U. S. Pat. 1,534,387. Conditioning and drying yeast. F. M.
Hildebrandt and C. N. Frey.

U. S. Pat. 1,727,847. Yeast. J. R. White (one-half to Henry Leeds).

U. S. Pat. 1,910,265. Conditioning yeast prior to drying. A. Shaver
and C. N. Frey (to Standard Brands, Inc.).

U. S. Pat. 2,031,668. Yeast purification. G. T. Reich.

Continuous Addition Process

Brit. Pat. 155,283, Dec. 15, 1920. Yeast. Verein der Spiritus-
Fabriken.

Brit. Pat. 155,284, Dec. 15, 1920. Yeast. Verein der Spiritus-
Fabriken.

Brit. Pat. 155,291, Dec. 15, 1920. Yeast. Verein der Spiritus-Fabriken.

Brit. Pat. 155,292, Dec. 15, 1920. Yeast Verein der Spiritus-Fabriken.

Brit. Pat. 222,514, Sept. 29, 1923. Lactic acid and yeast. A. Pollak.

Brit. Pat. 230,110, Mar. 3, 1924. Yeast. L. J. Howells.

Brit. Pat. 252,193, May 14, 1925. Yeast. W. H. F. Bührig.

Brit. Pat. 259,572, Oct. 6, 1925. Yeast propagation with continuous
addition of nutrient material and continuous withdrawal of yeast-
laden liquid. A. P. Harrison.

Brit. Pat. 275,328, May 4, 1926. Yeast. Distillers Co. Ltd. and E. A. Meyer.

Brit. Pat. 275,329. Yeast. Distillers Co. Ltd., and E. A. Meyer.

Brit. Pat. 277,476, Aug. 24, 1926. Yeast. Fleischmann Co. (to International Yeast Co., Ltd.).

Brit. Pat. 287,052, Mar. 12, 1927. Withdrawing yeast from vats. Zellstoffabrik Waldhof and O. Luhrs.

Brit. Pat. 291,146, Feb. 24, 1927. Yeast. H. Bucher.

Brit. Pat. 291,770, June 8, 1927. Yeast. K. A. Jacobsen.

Brit. Pat. 294,123, Jan. 14, 1927. Yeast. S. Sak.

Brit. Pat. 294,131, Jan. 14, 1927. Yeast. S. Sak.

Brit. Pat. 294,132. Yeast. S. Sak.

Brit. Pat. 294,134. Yeast. S. Sak.

Brit. Pat. 299,336, June 21, 1927. Yeast. A. J. C. Olsen and International Yeast Co., Ltd.

Brit. Pat. 308,324, Sept. 20, 1927. Yeast. S. Sak.

Brit. Pat. 334,502, May 1, 1929. Yeast. Distillers Co., Ltd. and E. A. Meyer.

Fr. Pat. 740,817, July 26, 1932. Yeast. Invention Ges. für Verwaltung und Verwertung Chemisch-Technischer Patente G. m. b. H. and S. K. Daranyi.

Ger. Pat. 618,021, Sept. 2, 1935. Yeast. Wirtschaftliche Vereinigung der deutschen Hefeindustrie.

Ger. Pat. 641,025, Jan. 23, 1937. Yeast. Wirtschaftliche Vereinigung der deutschen Hefeindustrie.

Ger. Pat. 659,951, May 14, 1938. Yeast. N. Moskovits.

U. S. Pat. 1,449,107. Continuous yeast propagation. F. Hayduck.

U. S. Pat. 1,449,108. Continuous yeast propagation. F. Hayduck.

U. S. Pat. 1,566,431. Yeast. S. Sak.

U. S. Pat. 1,676,437. Yeast. A. P. Harrison (to The Fleischmann Co.).

U. S. Pat. 1,677,529. Yeast. A. Pollak.

U. S. 1,722,746. Yeast manufacture. J. Hasling, Jr. (to The Fleischmann Co.).

U. S. Pat. 1,724,952. Yeast. E. A. Meyer (to The Fleischmann Co.).

U. S. Pat. 1,730,876. Yeast. W. H. F. Bührig (to The Fleischmann Co.).

U. S. Pat. 1,750,267. Apparatus for manufacturing yeast by propagation by an "addition" process. A. P. Harrison (to Standard Brands, Inc.).

U. S. Pat. 1,884,272. Yeast propagation. S. Sak.

U. S. Pat. 1,891,841. Continuous-addition continuous-withdrawal yeast propagation. S. Sak.

U. S. Pat. 1,938,081. Yeast. E. A. Meyer (to Standard Brands, Inc.).

U. S. Pat. 2,035,048. Yeast. S. C. Daranyi.

Distillers' Slop

Fr. Pat. 649,741, July 20, 1927. Beverages; yeast. M. J. J. Boutteaux.

Ger. Pat. 185,332, July 23, 1905. Process of manufacturing yeast and fermenting distillery mash. Nitritfabrik Akt. Ges., Copenick b. Berlin.

U. S. Pat. 1,702,303. Food product from distillery yeast. A. Kahn. (to Soc. française des produits alimentaires azotes).

U. S. Pat. 2,008,584. Treating waste distillery slop for use in propagation of commercial compressed yeast. H. L. King. (to National Grain Yeast Corp.).

Drying and Dried

- Brit. Pat. 3,166, Feb. 12, 1908. Desiccating yeast. G. F. Humphrey.
- Brit. Pat. 3,407, Feb. 10, 1912. Dry yeast. S. Oppenheimer.
- Brit. Pat. 23,055, Oct. 18, 1906. Dry yeast preparation. A. J. Oxford.
- Brit. Pat. 27,572, Dec. 8, 1911. Dry yeast. P. D. H. Ohlhafer.
- Brit. Pat. 27,573, Dec. 8, 1911. Dry yeast. P. D. H. Ohlhafer.
- Brit. Pat. 27,574, Dec. 8, 1911. Dried yeast. P. D. H. Ohlhafer.
- Brit. Pat. 27,711, Dec. 9, 1911. Dry yeast. C. H. Field.
- Brit. Pat. 27,782, Nov. 29, 1910. Dry yeast. J. A. Stevenson.
- Brit. Pat. 102,855, Mar. 4, 1916. Yeast. A. G. Salamon and L. J. Riley.
- Brit. Pat. 175,622, Feb. 10, 1922. Drying yeast. E. Klein.
- Brit. Pat. 175,623, Feb. 10, 1922. Drying yeast. E. Klein.
- Brit. Pat. 181,076, Feb. 28, 1921. Preserving yeast. C. A. Jensen.
- Brit. Pat. 202,030, May 10, 1922. Yeast. C. A. Jensen.
- Brit. Pat. 203,109, June 28, 1922. Preserving food. Plausen's (Parent Co.) Ltd.
- Brit. Pat. 226,916, Oct. 29, 1923. Spray desiccation. J. E. Nyrop.
- Brit. Pat. 228,017, Feb. 8, 1924. Drying yeast. E. A. Fuller.
- Brit. Pat. 294,209, July 20, 1927. Vinegar and yeast. M. J. J. Boutteaux.
- Brit. Pat. 300,039, Dec. 24, 1927. Dry yeast. Matro G. m. b. H.

Brit. Pat. 307,830, Mar. 14, 1928. Electrodeposition of rubber, yeast, etc. Siemens-Elektro-Osmose Ges.

Brit. Pat. 365,086, Sept. 15, 1930. Yeast. R. Bertel and O. Schüssler.

Brit. Pat. 408,362, April 12, 1934. Yeast. The International Yeast Co., Ltd. H. A. Auden and P. Eaglesfield.

Brit. Pat. 476,545, Dec. 10, 1937. Drying yeast. N. V. Internationale Suiker en Alcohol Compagnie (International Sugar and Alcohol Co. "Isaco").

Can. Pat. 411,325, Mar. 23, 1943. Preserving yeast. L. Atkin, G. W. Kirby and C. N. Frey (to Standard Brands, Inc.).

Dutch Pat. 1,960, May 15, 1917. Dried yeast. P. D. H. Ohlhaver.

Fr. Pat. 665,009, Dec. 3, 1928. Yeast. L. Weil.

Fr. Pat. 716,259, April 29, 1931. Yeast. "Salvis" A. G. für Nahrungsmittel and Chemische Industrie.

Fr. Pat. 742,578, Mar. 11, 1933. Yeast. C. Hary.

Fr. Pat. 788,370, Oct. 9, 1935. Yeast. N. A. Örström.

Fr. Pat. 800,324, July 2, 1936. Drying and hardening animal and vegetable substances. A. Kroulek.

Ger. Pat. 244,285, Oct. 5, 1910. Drying yeast. Versuchs-und Lehranstalt für Brauerei.

Ger. Pat. 257,131, Mar. 2, 1911. Increasing the efficiency of dried yeast. P. D. H. Ohlhaver.

Ger. Pat. 257,176, Mar. 2, 1911. Drying yeast. P. D. H. Ohlhaver.

Ger. Pat. 257,177, Mar. 2, 1911. Preserving dried yeast. P. D. H. Ohlhaver.

Ger. Pat. 262,045, Feb. 10, 1912. Dry yeast. Dauerhefe Ges.

Ger. Pat. 264,996, June 12, 1912. Dry yeast with roast aroma. Versuchs-und Lehranstalt für Brauerei.

Ger. Pat. 266,001, Jan. 11, 1911. Dry yeast. Versuchs-und Lehranstalt für Brauerei. Addition to Ger. Pat. 264,996.

Ger. Pat. 267,436, Nov. 16, 1911. Drying yeast. Versuchs-und Lehranstalt für Brauerei.

Ger. Pat. 482,411, July 17, 1926. Yeast. O. Sauer (née Buchholz).

Ger. Pat. 498,078, April 5, 1925. Dry yeast preparations. Matro G. m. b. H.

Ger. Pat. 507,402, May 10, 1927. Yeast. O. K. Sauer (née Buchholz).

Ger. Pat. 518,606, Oct. 24, 1926. Yeast. Brennerei "Kornblume" Anderson, Nissen & Co. G. m. b. H.

Ger. Pat. 621,908, Nov. 15, 1935. Apparatus for dehydrating yeast. Poth & Co. Presshefefabrik G. m. b. H.

Ger. Pat. 633,994, Aug. 14, 1936. Dry yeast. G. Neumüller.

Ger. Pat. 655,337, Jan. 13, 1938. Drying yeast. Holzhydrolyse A. G. and E. Färber.

Ger. Pat. 656,683, Feb. 11, 1938. Drying yeast. Holzhydrolyse A. G. and E. Färber.

Hung. Pat. 114,621, July 15, 1936. Dry yeast. R. Bertel.

Swed. Pat. 86,484, June 9, 1936. Dehydrating yeast. Svenska Jästfabriks Aktiebolaget (H. A. L. Sward, G. E. S. Sward, and A. G. H. Sward, inventors).

U. S. Pat. 941,221. Dry yeast compounds. J. E. Yost.

U. S. Pat. 986,898. Drying yeast. P. A. Brangier.

U. S. Pat. 1,020,306. Manufacturing dried yeast. P. D. H. Ohlhaber.

U. S. 1,021,700. Moistening dried yeast to increase its raising power. P. D. H. Ohlhaber.

- U. S. Pat. 1,033,807. Making dry yeast. E. Koelitz.
- U. S. Pat. 1,039,999. Preserving dried yeast in a desiccator.
P. D. H. Ohlhaver.
- U. S. Pat. 1,386,359. Dry yeast. W. B. D. Penniman.
- U. S. Pat. 1,386,360. Dry yeast. W. B. D. Penniman.
- U. S. Pat. 1,386,361. Dry yeast. W. B. D. Penniman.
- U. S. Pat. 1,391,561. Drying brewers' yeast for food. J. C. Miller.
- U. S. Pat. 1,420,557. Dried yeast. E. Klein.
- U. S. Pat. 1,420,558. Dried yeast. E. Klein.
- U. S. Pat. 1,420,630. Drying yeast. A. W. Hixson.
- U. S. Pat. 1,447,789. Apparatus for comminuting and drying yeast.
E. Klein.
- U. S. Pat. 1,464,710. Pretreating dried yeast to increase its
baking strength. A. W. Hixson.
- U. S. Pat. 1,481,671. Dried yeast mixture. T. J. Allen.
- U. S. Pat. 1,534,387. Conditioning and drying of yeast. F. M.
Hildebrandt, and C. N. Frey.
- U. S. Pat. 1,596,983. Preserving and drying yeast. J. H.
Mackintosh.
- U. S. Pat. 1,625,121. Dried yeast. F. M. Hildebrandt and C. N. Frey.
- U. S. Pat. 1,641,676. Dry yeast composition. C. B. Hill and M. H.
Givens.
- U. S. Pat. 1,641,677. Dry yeast composition. C. B. Hill and M. H.
Givens.
- U. S. Pat. 1,643,047. Drying yeast in mixture with purified cellulose.
A. K. Balls.
- U. S. Pat. 1,694,807. Cooling and drying yeast. E. B. Brown (to
The Fleischmann Co.).

U. S. Pat. 1,736,657. Dry yeast for medicinal and pharmaceutical purposes. C. Massatsch. (to Metro G. m. b. H.).

U. S. Pat. 1,859,250. Dry yeast compositions containing calcium lactate. R. Bertel.

U. S. Pat. 1,909,011. Dried yeast. H. Riley.

U. S. Pat. 1,991,629. Dried yeast composition containing aerated "calcium sulfate cream" etc. H. Riley.

U. S. Pat. 1,934,941. Dried yeast. K. Mizobata.

U. S. Pat. 2,111,201. Drying yeast. H. A. Auden and P. Eaglesfield (to Standard Brands, Inc.).

U. S. Pat. 2,233,251. Desiccated live yeast. A. Dragli.

U. S. Pat. 2,292,447. Freezing and drying coffee, egg whites, milk, potatoes, yeast, etc. J. C. Irwin (to United States Cold Storage Corp., D. C. Pfeiffer and J. M. Hill).

Extracts

Belg. Pat. 405,477, Nov. 30, 1934. Concentrated yeast extracts. L. L. Buguin.

Brit. Pat. 190,147, Dec. 6, 1922. Yeast extracts. M. L. Marsan (née Portesseau).

Brit. Pat. 197,695, May 12, 1923. Yeast extract. Continentale Industrie-Verwertung Ges.

Brit. Pat. 451,089, July 29, 1936. Preparation of yeast extract. J. H. Millar and A. Guinness, Son & Co., Ltd.

Fr. Pat. 462,198, Nov. 16, 1912. Yeast food extract. "Visca" Nahrungsmittel.

Fr. Pat. 791,640, Dec. 14, 1935. Yeast extract. A. Guinness, Son & Co., Ltd.

U. S. Pat. 1,200,011. Yeast extract for use as a food. A. Nilson.

Feeds and Food

Austrian Pat. 122,961, Jan. 15, 1931. Food product from yeast.
F. Simmer.

Austrian Pat. 154,427, Sept. 26, 1938. Yeast compositions..
O. Czadek and E. Kupelwieser.

Austrian Pat. 156,076, May 10, 1939. Food preparation from yeast.
O. Czadek.

Brit. Pat. 7,813, April 3, 1913. Fodder from brewers' yeast.
A. C. Bunting.

Brit. Pat. 26,697, Nov. 20, 1912. Yeast. E. Krause.

Brit. Pat. 117,666, July 24, 1917. Yeast. H. W. Anderschon, W.
Lamshead and J. M. Ramsay.

Brit. Pat. 131,579, May 9, 1919. Diastase; yeast foods. J. Takamine.

Brit. Pat. 156,153, Dec. 31, 1920. Edible yeast preparations.
H. Plauson and J. A. Vielle.

Brit. Pat. 201,512, Nov. 27, 1922. Yeast; diastase; bread. Inter-
national Takamine Ferment Co.

Brit. Pat. 218,679, July 7, 1923. Food products from yeast. M.Kahn.

Brit. Pat. 225,228, Nov. 20, 1923. Foods and other products from
yeasts, etc. M. Kahn, E. La Breton and G. Schaeffer.

Brit. Pat. 235,834, June 17, 1924. Food preparations from autolyzed fish, autolyzed yeast, etc. M. Kahn, E. Le Breton and G. Schaeffer.

Brit. Pat. 236,210, June 24, 1924. Baking powder containing yeast. A. Pollak.

Brit. Pat. 243,373, Nov. 19, 1924. Autolysis of yeast and other microorganisms. M. Kahn, E. Le Breton and G. Schaeffer.

Brit. Pat. 246,779, Jan. 29, 1925. Food products, fats and other products from fish, yeast, etc. Soc. Française des Produits Alimentaires Azotés.

Brit. Pat. 264,064, June 1, 1926. Food preparations from yeast, etc. Northwestern Yeast Co.

Brit. Pat. 271,883, May 26, 1926. Durable yeast preparations. E. I. Levin.

Brit. Pat. 304,314, Jan. 19, 1928. Yeast for use as food for animals. Selbi Soc. d'Exploitation de Licences de Brevets Industriels.

Brit. Pat. 304,895, Dec. 24, 1927. Therapeutic composition comprising iron and yeast. Matro G. m. b. H.

Brit. Pat. 367,063, Nov. 29, 1929. Beverages. H. Krönig (to Fritz Lux).

Brit. Pat. 367,909, Dec. 3, 1929. Vitamins. F. Lux. Addition to Brit. Pat. 367,063.

Brit. Pat. 368,919, Jan. 30, 1930. Vitamin-containing beers. F. Lux. Addition to Brit. Pat. 367,063 and supplemented by Brit. Pat. 367,909.

Brit. Pat. 426,729, April 9, 1935. Beverages: yeast. H. L. Wohlmuth (to Manfred Wahl).

Brit. Pat. 450,117, July 10, 1936. Yeast preparations. J. H. Millar and Arthur Guinness, Son & Co. Ltd.

Brit. Pat. 483,587, April 22, 1938. Food preparation. C. Weizmann.

Brit. Pat. 489,142, July 20, 1938. Irradiating foods, medicines, etc. H. F. Rost.

Brit. Pat. 493,030, Sept. 30, 1938. Yeast; food preparation. C. N. Frey and A. S. Schultz (to The International Yeast Co. Ltd.).

Brit. Pat. 534,862, Mar. 20, 1941. Yeast pastes. B. P. S. Ltd. and H. W. Avis.

Brit. Pat. 537,423, June 23, 1941. Alimentary preparations. C. Weizmann.

Brit. Pat. 549,011, Nov. 3, 1942. Vitamin-containing material from brewers yeast. T. S. Carter and D. Kulka and E. H. Gasking.

Can. Pat. 233,179, July 31, 1923. Raw yeast. H. Plauson.

Can. Pat. 258,494, Mar. 2, 1926. Nitrogenous yeast food. O. Hamburger.

Can. Pat. 308,908, Feb. 24, 1931. Yeast product. C. N. Frey, E. B. Brown and C. Craig (to Standard Brands, Inc.).

Can. Pat. 308,909, Feb. 24, 1931. Yeast product. C. N. Frey, E. B. Brown and C. Craig. (to Standard Brands, Inc.).

Can. Pat. 308,911, Feb. 24, 1931. Yeast product. C. N. Frey, E. B. Brown and C. Craig (to Standard Brands, Inc.).

Can. Pat. 372,871, Mar. 29, 1938. Yeast foods. H. Rosenthal.

Fr. Pat. 49,490, May 1, 1939. Incorporating sucrose and sodium chloride into an alcohol yeast. J. C. Matti. Addition to Fr. Pat. 827,833

Fr. Pat. 726,160, Nov. 10, 1931. Nutritive products. Kirin Beer Kabushiki Kaisha.

Fr. Pat. 735,596, April 20, 1932. Food products. Les Etablissements Byla.

Fr. Pat. 788,864, Oct. 18, 1935. Food for diabetics. K. Wille and E. Fritsch.

Fr. Pat. 834,322, Nov. 17, 1938. Preparation of yeast or proteins. C. Weizmann.

Ger. Pat. 271,881, Aug. 11, 1909. Fodder from cooked beer yeast. H. Jaroschka and A. Richter.

Ger. Pat. 484,300, May 24, 1927. Food for animals. O. Draude, R. Flohr and P. Gerling.

Ger. Pat. 494,873, Jan. 17, 1924. Food. "Nahrungsmittelfabrik München, G. m. b. H.

Ger. Pat. 504,816, June 27, 1922. Vitamin-rich products from yeast. Diamalt A. G.

Ger. Pat. 534,866, June 11, 1925. Food preparations containing yeast. "Nahrungsmittelfabrik München G. m. b. H. Addition to Ger. Pat. 494,873.

Ger. Pat. 537,057, May 19, 1928. Foods containing vitamins. "Enosis" Soc. Anon. Comm. Ind.

Ger. Pat. 560,104, Jan. 8, 1925. Food preparations containing yeast. "Nahrungsmittelfabrik München, G. m. b. H.

Ger. Pat. 627,232, Mar. 11, 1936. Fodder. C. Oetling and M. Heudtlass.

Ger. Pat. 629,415, May 5, 1936. Alimentary yeast. W. Halden.

Ger. Pat. 634,151, Aug. 18, 1936. Yeast for making whole-meal bread. F. Dinand.

Ger. Pat. 682,663, Sept. 28, 1939. Yeast preparation. E. Vahlen.

Ger. Pat. 691,911, May 9, 1940. Yeast containing fodder. L. G. Wilkening.

Ger. Pat. 720,285, April 2, 1942. Supplementary feed. W. Klein and H. Schmid.

Ger. Pat. 723,600, June 25, 1942. Waste yeast from breweries, wine cellars, etc. G. Weck.

Ger. Pat. 731,158, Dec. 31, 1942. Liquid feed made from yeast and molasses. H. Metz and J. Krieglmeyer (to H. Metz).

Swed. Pat. 71,075, Feb. 3, 1931. Nutrient extract. Aktiebolaget Monox (N. V. Nilsson, inventor).

U. S. Pat. 1,012,147. Converting the nitrogenous substances of yeast into comestibles. P. Nolf.

U. S. Pat. 1,190,827. Yeast food and bread-improving composition. R. W. Wahl.

U. S. Pat. 1,207,012, Food from spent yeast. P. E. Floare.

U. S. Pat. 1,391,683. Food from waste yeast and sucrose. A. Herzfeld.

U. S. Pat. 1,415,469. Preparing yeast for food. H. Plauson.

U. S. Pat. 1,431,156. Yeast food for use in dough. W. A. Geere.

U. S. Pat. 1,472,344. "Humic substances" as foods for vegetables, mushrooms, bacteria, yeasts, molds, mucors and other organisms. A. Vasseux.

U. S. Pat. 1,474,674. Yeast. A. J. M. Jensen.

U. S. Pat. 1,477,132. Yeast composition. M. Kushiro.

U. S. Pat. 1,479,502. Yeast mixture. G. Heffelé.

U. S. Pat. 1,509,175. Yeast food for bread making. G. R. Potts.

U. S. Pat. 1,519,801. Yeast food. H. Riley.

U. S. Pat. 1,526,032. Food composition for use in baking, yeast manufacture, etc. J. A. Wessener.

U. S. Pat. 1,538,366. Yeast preparation for use in baking and for other dietetic and therapeutic purposes. R. Willstatter and H. Sobotka.

- U. S. Pat. 1,557,764. Yeast mixture. M. E. Neil.
- U. S. Pat. 1,572,533. Food from cheese and yeast. H. Heuser.
- U. S. Pat. 1,574,776. Yeast preparation. R. Willstätter and H. Sobotka.
- U. S. Pat. 1,575,762. Devitalized yeast for use in making bread and other food products. C. Hoffman and C. N. Frey.
- U. S. Pat. 1,589,853. "Yeast foam malted milk." C. B. Hill and M. H. Givens.
- U. S. Pat. 1,590,837. Food from cheese and yeast. H. Liebers.
- U. S. Pat. 1,599,563. "Yeast assistant" for use in making bread. A. H. Fiske.
- U. S. Pat. 1,603,472. Nitrogenous food products from yeast and like materials. M. Kahn.
- U. S. Pat. 1,611,531. Food products prepared by "autoheterolysis" of crushed fish or similar material in the presence of autolyzed yeast. M. Kahn, E. Le Breton and G. Schaeffer.
- U. S. Pat. 1,632,312. Use of yeast in preparing foods or fertilizers. F. C. Raeth.
- U. S. Pat. 1,636,563. "Yeast foam malted milk" C. B. Hill and M. H. Givens.
- U. S. Pat. 1,641,676. Dry yeast composition. C. B. Hill and M. H. Givens.
- U. S. Pat. 1,641,677. Dry yeast composition. C. B. Hill and M. H. Givens.
- U. S. Pat. 1,642,320. Food product from yeast. A. K. Balls.
- U. S. Pat. 1,642,537. Improving the flavor of yeast. E. B. Brown.
- U. S. Pat. 1,701,081. Food product from yeast. M. Nilsson (to The Fleischmann Co.)

U. S. Pat. 1,706,564. Yeast compositions. B. M. Dawson (to Fleischmann Co.).

U. S. Pat. 1,706,565. Yeast compositions. B. M. Dawson (to The Fleischmann Co.).

U. S. Pat. 1,706,566. Yeast compositions. B. M. Dawson (to The Fleischmann Co.).

U. S. Pat. 1,708,914. Food comprising dried yeast and peanut butter. Banerjee Dass (to Ellis-Foster Co.).

U. S. Pat. 1,712,025. Yeast food. O. R. Brown.

U. S. Pat. 1,722,775. Maltose products. F. C. Weber and W. H. Randall (to The Fleischmann Co.).

U. S. Pat. 1,729,409. Dough and yeast preparation for bread making. J. R. White.

U. S. Pat. 1,755,864. Food product formed by acid hydrolysis of starch and yeast. E. B. Brown, C. N. Frey and H. H. Harkins (to Standard Brands, Inc.).

U. S. Pat. 1,806,290. Cattle feed containing ammonium salts of the amino acids from yeast autolysis. R. Griessbach and O. Ambros. (to I. G. Farbenind. A. G.).

U. S. Pat. 1,828,283. Food product from yeast. C. N. Frey, E. B. Brown and C. Craig (to Standard Brands, Inc.).

U. S. Pat. 1,854,929. Food products produced by hydrolysis of protein materials such as yeast. C. N. Frey, E. B. Brown and C. Craig (to Standard Brands, Inc.).

U. S. Pat. 1,854,930. Food products produced by hydrolysis of protein materials such as yeast. C. N. Frey, E. B. Brown and C. Craig (to Standard Brands, Inc.).

U. S. Pat. 1,898,057. Candy containing yeast. Z. J. Kish (to Northwestern Yeast Co.).

U. S. Pat. 1,898,885. Food beverage formed with milk and yeast.
J. A. Moran.

U. S. Pat. 1,908,512. Cheese-like product made from yeast and milk-containing material. A. G. Heideman.

U. S. Pat. 1,953,754. Food products prepared by treatment with yeast. H. C. Gore and C. N. Frey (to Standard Brands, Inc.).

U. S. Pat. 1,965,355. Homogenizing milk together with yeast. C. L. Patterson.

U. S. Pat. 1,994,496. Homogenized suspension of yeast and milk.
L. Warncke (to C. L. Patterson).

U. S. Pat. 2,031,724. Food product containing dried yeast. W. A. McKinney and H. G. Lorenzen (to Kitchen Art Foods, Inc.).

U. S. Pat. 2,033,009. Yeast food with an "alkaline bias." H. Rosenthal.

U. S. Pat. 2,065,332. Yeast product of enhanced food value and palatability. G. W. Kirby and C. N. Frey (to Standard Brands, Inc.).

U. S. Pat. 2,138,434. Edible and viable yeast product. C. A. Thomas and C. A. Hochwalt (to Monsanto Chemical Co.).

U. S. Pat. 2,139,408. Yeast-fermented beverages. H. Heuser.

U. S. Pat. 2,141,455. Treating yeast to obtain enzyme and vitamin products. C. Weizmann.

U. S. Pat. 2,149,306. Soluble food extract from brewers' yeast.
J. H. Millar (to Arthur Guinness, Son & Co. Ltd.).

U. S. Pat. 2,156,499. Treating yeast for use in food mixtures such as ice cream. L. M. Holcomb.

U. S. Pat. 2,235,613. Food product from milk and yeast. W. P. M. Grele

U. S. Pat. 2,235,827. Vitamin sirup from yeast. N. M. Cregar, F. E. Timmer and R. M. Allen (to Vegex, Inc.).

U. S. Pat. 2,321,673. Yeast food mixtures for use in bread dough batches. L. A. Hall (to The Griffith Laboratories Inc.).

Growth Substances

Brit. Pat. 16,925, July 24, 1911. A material for use as a food for yeast or bacteria in fermentation processes. A. Fernbach and E. H. Strange.

Brit. Pat. 203,300. June 26, 1923. Yeast. E. Klein.

Brit. Pat. 225,252, May 28, 1923. Yeast. The Fleischmann Company.

Brit. Pat. 337,947, Oct. 24, 1928. Yeast. C. Langemeyer.

Brit. Pat. 511,394, Aug. 17, 1939. Yeast. C. J. Jackson and Arthur Guinness, Son & Co., Ltd.

Brit. Pat. 552,713, April 21, 1943. Yeast-growth promoting substances. Roche Products Ltd., F. Bergel, A. L. Morrison, N. C. Hindley and A. R. Moss.

Fr. Pat. 658,099, July 26, 1928. Sugar solutions. E. Langfeldt.

Ger. Pat. 697,104, Sept. 5, 1940. Growing yeast in xylose solutions. E. Farber.

Jap. Pat. 93,042, Sept. 30, 1931. Utilization of gluconic acid for the growth of yeast. T. Takahasi.

U. S. Pat. 1,475,494. Yeast. H. A. Kohman, R. Irvin and R. J. Cross.

U. S. Pat. 2,174,543. Increasing yeast production and activity. R. J. Williams (to Standard Brands, Inc.).

U. S. Pat. 2,249,789. Stimulating fermentation of sugar solutions by yeast. A. S. Schultz, L. Atkin and C. N. Frey (to Standard Brands Inc.).

Increasing Ergosterol Content

Austrian Pat. 140,190, Yeast. W. Halden.

Brit. Pat. 295,757, May 23, 1927. Activated product from yeast. I. S. Maclean.

Brit. Pat. 322,465, June 2, 1928. Sterols. I. G. Farbenind. A. G.

Brit. Pat. 354,371, May 8, 1930. Irradiating yeast. P. Hall.

Brit. Pat. 396,206, Aug. 3, 1933. Yeast. The International Yeast Co., Ltd. and W. G. Bennett.

Brit. Pat. 500,663, Feb. 14, 1939. Yeast. The International Yeast Co. Ltd. and W. G. Bennett. Addition to Brit. Pat. 396,206.

Ger. Pat. 517,499, April 7, 1927. Sterols. I. G. Farbenind. A. G. (R. Griessbach and O. Ambros, inventors).

Ger. Pat. 720,007, Mar. 26, 1942. Increasing the ergosterol content of yeast. G. Zorkóczy (to Gischwindt fêle Szesz-Élesztô-Likör-es-Rum-Gyar Részvéntársaság).

Hung. Pat. 126,017, Jan. 16, 1941. Increasing the ergosterol content of yeasts. Gschwindt-fêle Szesz-Elesztô-Likör-és Rumgyár R. T.

U. S. Pat. 1,676,579. Light treatment for killing bacteria, etc. G. Sperti, R. J. Norris, R. B. Withrow and H. Schneider (to D. Lawrence, trustee).

U. S. Pat. 1,724,706. Ergosterol from yeast. R. Griessbach and O. Ambros (to Winthrop Chemical Co.).

U. S. Pat. 1,877,382. Insulating apparatus suitable for irradiating yeast, etc. C. E. Bills (to Mead Johnson & Co.).

U. S. Pat. 2,059,980. Yeast. W. G. Bennett (to Standard Brands, Inc.).

U. S. Pat. 2,276,710. Yeast and like microorganisms having a high ergosterol content. W. G. Bennett (to Standard Brands, Inc.).

Increasing Salts Content

Ger. Pat. 579,909, July 3, 1933. Yeast. Erste Hessische Presshefefabrik and Dampfbrennerei Inhaber: J. Pleser Sohn.

Increasing Vitamin Content

Ger. Pat. 738,655, July 22, 1943. Enriching yeast with vitamin B₁. H. Fink and F. Just (to H. Fink).

U. S. Pat. 2,223,501. Yeast treatment to render contained vitamin B complexes more readily available. W. P. Torrington (to Emulsions Process Corp.).

U. S. Pat. 2,295,036. Vitamin B₁ assimilation by yeast. H. J. Gorcica and H. Levine (to Pabst Brewing Co.).

U. S. Pat. 2,243,129. Yeast with a high vitamin B₁ content. A. S. Schultz (to Standard Brands, Inc.).

U. S. Pat. 2,285,465. Yeast. A. S. Schultz, L. Atkin and C. N. Frey (to Standard Brands, Inc.).

U. S. Pat. 2,328,025 Yeast of high vitamin B₁ potency. M. W. Mead, Jr. and J. Lee (50% each to Hoffman-La Roche, Inc. & National Grain Yeast Corp.).

Invertase

Brit. Pat. 418,211, Oct. 22, 1934. Invertase. Standard Brands, Inc.

U. S. Pat. 1,689,607. Invertase preparation from yeast. L. Wickenden (to J. J. Naugle).

U. S. Pat. 1,855,591. Dry invertase preparation. L. Wallerstein (to Wallerstein Co.).

U. S. Pat. 1,855,592. Dry invertase preparation. L. Wallerstein (to Wallerstein Co.).

U. S. Pat. 1,919,675. Invertase preparation from yeast. L. Wallerstein (to Wallerstein Co.).

U. S. Pat. 1,919,676. Invertase preparation from yeast. L. Wallerstein (to Wallerstein Co.).

U. S. Pat. 1,990,505. Invertase preparation from yeast. L. Wallerstein (to Wallerstein Co.).

Molasses for Propagation

Austrian Pat. 125,965, Sept. 15, 1930. Purifying sugar sirups prior to fermentation. M. Fischl's Söhne and F. Rosenberg.

Brit. Pat. 123,711, July 26, 1918. Yeast. L. J. P. M. J. Dupire.

Brit. Pat. 124,364, July 27, 1918. Yeast. L. J. P. M. J. Dupire.

Brit. Pat. 149,438, May 13, 1919. Yeast. L. J. P. M. J. Dupire.

Brit. Pat. 169,509, June 23, 1920. Yeast. A. Wohl.

Brit. Pat. 180,043, Feb. 17, 1921. Yeast. R. Gilmour.

Brit. Pat. 196,926, April 26, 1923. Molasses; yeast. Vereinigte Mautner'sche Presshefe Fabriken Ges.

Brit. Pat. 209,034, Oct. 6, 1923. Yeast. R. Hamburger and S. Kaesz.

Brit. Pat. 228,734, Mar. 14, 1924. Yeast. A. P. C. Jorgensen and N. L. C. H. Kalhauge.

Brit. Pat. 234,843, May 30, 1924. Yeast. Vereinigte Mautner'sche Presshefe-Fabriken Ges.

Brit. Pat. 283,969, Jan. 21, 1927. Yeast. Aktieselskabet Dansk Gaerings Industri.

Brit. Pat. 283,970. Yeast. Aktieselskabet Dansk Gaerings Industri.

Brit. Pat. 311,979, July 7, 1928. Sugar solutions for yeast manufacture etc. E. Langfeldt.

Brit. Pat. 312,705, March 6, 1928. Purifying sugar solutions for use in yeast production, etc. H. B. Wooldridge and P. G. Clark.

Brit. Pat. 319,641, June 25, 1928. Purifying molasses. Distillers Co., Ltd., W. G. Bennett and A. M. Peake.

Brit. Pat. 346,103, Feb. 18, 1930. Yeast. H. Claassen.

Brit. Pat. 551,428, Feb. 22, 1943. Treatment of molasses for use in the manufacture of yeast and alcohol. Standard Brands, Inc. and W. W. Triggs.

Can. Pat. 343,629, July 31, 1934. Yeast. G. W. Kirby and C. N. Frey (to Standard Brands, Inc.).

Fr. Pat. 677,228, June 24, 1929. Molasses for the production of yeast. The Distillers Co., Ltd.

Fr. Pat. 710,413, Feb. 3, 1931. Yeast. Aktiebolaget Separator.

Fr. Pat. 715,152, April 13, 1931. Molasses. Bergedorfer Eisenwerk A. G. Astra-Werke.

Fr. Pat. 715,785, April 21, 1931. Molasses. J. W. Thompson and J. W. Hinchley.

Fr. Pat. 723,013, Sept. 19, 1931. Yeast. Ramesol and Schmidt A. G.

Fr. Pat. 757,125, Dec. 20, 1933. Molasses. N. V. Industriele Maatschappij Voorheen Noury & van de Lande.

Ger. Pat. 508,061, May 24, 1925. Yeast. Vereinigte Mautner'sche Presshofs Fabriken G. m. b. H.

Ger. Pat. 590,209, Dec. 29, 1933. Yeast. Nordd. Hefeind. A. G.

Ger. Pat. 599,497, July 3, 1934. Bleaching molasses for yeast manufacture. J. W. Thompson and J. W. Hinchley.

Ger. Pat. 602,426, Sept. 8, 1934. Clarifying molasses for yeast manufacture. Lindenmeyer & Co.

Ger. Pat. 646,579, June 17, 1937. Addition to molasses for propagation of bakers' yeast. Pfeifer & Langen G. m. b. H. (H. Claassen, inventor). Addition to Ger. Pat. 641,742.

Ger. Pat. 668,085, Nov. 25, 1938. Yeast. Ramesol & Schmidt A. G.

Ger. Pat. 688,764, Feb. 8, 1940. Yeast fermentation of molasses. Ramesol and Schmidt A. G.

Russ. Pat. 37,668, July 31, 1934. Yeast. A. M. Malkov.

U. S. Pat. 1,170,110. Yeast from molasses. G. Koth.

U. S. Pat. 1,642,929. Preparing molasses for yeast manufacture. R. Kusserow.

U. S. Pat. 1,667,928, Treating molasses. R. L. Corby, F. M. Scales and W. H. F. Buhrig.

U. S. Pat. 1,687,561. Clarifying cane molasses for the growing of yeast. C. Hoffman, C. N. Frey and F. M. Hildebrandt (to The Fleischmann Co.).

U. S. Pat. 1,688,831. Preparing cane molasses for use in manufacture of yeast by the aeration process. F. Ramschoff.

U. S. Pat. 1,733,962. Yeast. R. Hamburger, S. Kaesz and F. Hartig (to Standard Brands, Inc.).

U. S. Pat. 1,770,402, Preparing molasses for use in yeast manufacture. R. Hamburger and S. Kaesz (to Standard Brands Inc.).

U. S. Pat. 1,860,832. Treatment of molasses for yeast manufacture. W. G. Bennett and A. M. Peake: (to Standard Brands, Inc.).

U. S. Pat. 1,933,803. Electrolytic bleaching of molasses for yeast production. J. W. Thompson and J. W. Hinchley.

U. S. Pat. 2,075,127. Clarifying molasses (such as that for use in yeast manufacture). M. W. Mead, Jr. (to National Grain Yeast Corp.).

U. S. Pat. 2,187,990. Yeast production with use of molasses. P. Steinacker.

U. S. Pat. 2,337,641. Molasses purification, as in the treatment of cane molasses, for use in a yeast nutrient medium. W. H. Buhrig and H. M. Harff (to Standard Brands, Inc.).

Nitrogenous Materials for Growing

- Brit. Pat. 174,625, Jan. 26, 1922. Yeast. N. Muskovits.
- Brit. Pat. 174,626, Jan. 26, 1922. Yeast. N. Muskovits. Addition to Brit. Pat. 174,625.
- Brit. Pat. 174,627, Jan. 26, 1922. Yeast. N. Muskovits. Addition to Brit. Pat. 174,625.
- Brit. Pat. 174,628, Jan. 26, 1922. Yeast. Krauz Muskovits Egyesult Iportelepeke Részvénytársaság (formerly Muskovits, Mor, és Fla).
- Brit. Pat. 181,293, Feb. 28, 1921. Yeast. C. A. Jensen.
- Brit. Pat. 195,963, March 29, 1923. Yeast. A. Pollak.
- Brit. Pat. 197,935, May 14, 1923. Yeast. A. Pollak.
- Brit. Pat. 217,909, June 19, 1923. Yeast. G. Gaux and A. Salmon.
- Brit. Pat. 230,049, Feb. 28, 1924. Yeast. Mellemeuro-Paeisk Patent-Financierings-Selskab Aktieselskab.
- Brit. Pat. 230,050, Yeast. Mellemeuro-Paeisk Patent-Financierings Selskab Aktieselskab.
- Brit. Pat. 230,051. Yeast. Mellemeuro-Paeisk Patent-Financierings Selskab Aktieselskab.
- Brit. Pat. 270,770, Nov. 10, 1925. Yeast. J. P. H. Yansen.
- Brit. Pat. 292,202, Feb. 19, 1927. Yeast. H. Bücher.
- Brit. Pat. 424,424, Feb. 18, 1935. Fermentation mashies. "Delta" Technische Verkehrs A. G.
- Brit. Pat. 436,591, Oct. 11, 1935. Protein degradation products. A. F. J. Friedel.
- Brit. Pat. 464,662, April 22, 1937. Yeast. A. S. Schultz and C. N. Frey (to the International Yeast Co., Ltd.).

Brit. Pat. 502,762, Mar. 24, 1939. Yeast. The International Yeast Co. Ltd. and E. A. Meyer.

Brit. Pat. 523,013, Jan. 15, 1941. Improving yeast. Standard Brands, Inc.

Brit. Pat. 539,825, Sept. 25, 1941. Yeast propagation. Standard Brands, Inc.

Can. Pat. 258,456, Mar. 2, 1926. Yeast. R. Hamburger, S. Kaesz and F. Hartig.

Can. Pat. 258,457, Mar. 2, 1926. Yeast. R. Hamburger, S. Kaesz and F. Hartig.

Can. Pat. 300,618, May 27, 1930. Yeast. C. N. Frey, A. P. Harrison and A. Schultz (to The Fleischmann Co., to Standard Brands, Inc.).

Danish Pat. 35,549, Jan. 25, 1926. Nutrient substances for the manufacture of yeast. Mellemeuropaeisk Patent-Financierings Selskab.

Fr. Pat. 632,848, Mar. 21, 1927. Yeast. H. Bucher.

Fr. Pat. 636,481, June 23, 1927. Yeast. M. Szpilfogel.

Fr. Pat. 704,113, Oct. 14, 1930. Yeast. E. Jellinick.

Fr. Pat. 751,268, Aug. 30, 1933. Yeast. Pfeifer & Langen A. G.

Fr. Pat. 783,606, July 17, 1935. Yeast. The British Arkady Co., Ltd.

Ger. Pat. 638,575, Nov. 19, 1936. Yeast. Wirtschaftliche Vereinigung der Deutschen Hefeindustrie.

Ger. Pat. 643,339, April 5, 1937. Yeast. H. Braasch and A. Braasch.

Ger. Pat. 667,987, Nov. 24, 1938. Yeast. ["]Starkefabrik Kyritz G. m. b. H. (W. Hönsch, inventor).

Ger. Pat. 688,665, Feb. 8, 1940. Growing of food yeasts. Hefeindustrie-Verein, e. V.

- Hung. Pat. 122,845, Jan. 2, 1940. Yeast nutrient. L. Kováts.
- Norw. Pat. 57,738, Mar. 22, 1938. Yeast. L. Brandstrup.
- Swiss. Pat. 171,026, Nov. 1, 1934. Fermenting medium. "Delta"
Technische Verkehrs A. G.
- U. S. Pat. 1,425,065. Yeast production. B. A. Stagner.
- U. S. Pat. 1,434,462. Yeast. T. B. Wagner.
- U. S. Pat. 1,457,319. Hydrolyzed collagen for nitrogen nutrition
of yeast. B. A. Stagner.
- U. S. Pat. 1,457,320. Hydrolyzed collagen for nitrogen nutrition
of yeast. B. A. Stagner.
- U. S. Pat. 1,465,471. Yeast. R. L. Corby and R. Glasgow.
- U. S. Pat. 1,475,215. Yeast. A. Wohl.
- U. S. Pat. 1,558,627. Yeast. A. Pollak.
- U. S. Pat. 1,571,932. Yeast. R. L. Corby and R. Glasgow.
- U. S. Pat. 1,580,550. Yeast. J. F. Wroten.
- U. S. Pat. 1,732,922. Yeast production. G. S. Bratton (to Anheuser-
Busch, Inc.).
- U. S. Pat. 1,767,646. Yeast. G. S. Bratton (to Anheuser-Busch, Inc.)
- U. S. Pat. 1,774,546. Baking yeast. H. Claassen.
- U. S. Pat. 1,974,937. Yeast propagation. J. R. White.
- U. S. Pat. 2,084,736. Yeast. S. Lutz and R. R. Irvin (to National
Grain Yeast Corp.).
- U. S. Pat. 2,094,023. Yeast manufacture. A. Pollak.
- U. S. Pat. 2,214,028. Yeast. E. A. Meyer. (to Standard Brands, Inc.)

Preserving

- Brit. Pat. 14,067, June 19, 1906. Treating yeast. W. J. Temple.
- Brit. Pat. 16,901, July 19, 1912. Preserving dried yeast. P. D. H. Ohlhaber.
- Brit. Pat. 18,844, Aug. 16, 1912. Increasing the activity of yeast. A. Pollak.
- Brit. Pat. 26,005, Nov. 12, 1912. Yeast. Malz-und Nährpräparato-Ges.
- Brit. Pat. 484,818, May 11, 1938. Preserving live yeast. F. Leonard.
- Fr. Pat. 827,833, May 4, 1938. Preserving yeast. J. C. Matti.
- Ger. Pat. 268,091, Dec. 14, 1911. Aging and preserving yeast. Diamalt A. G.
- Ger. Pat. 486,170, Feb. 3, 1927. Arresting the glucolysis of living cells. Schering-Kahlbaum A. G. (W. Schoëller and M. Gehrke, inventors).
- Ger. Pat. 513,511, Dec. 20, 1927. Fermentation. O. K. Sauer (née Buchholz).
- Ger. Pat. 557,158, May 26, 1927. Durable yeast preparations. E. I. Levin.
- Ger. Pat. 725,024, July 30, 1942. Preserving yeast. J. C. Matti (to Compagnie internationale de procédés de panification "itam" and Société Fould-Springer).
- U. S. Pat. 1,056,540. Bleaching and preserving yeast. O. Hentschel.
- U. S. Pat. 1,078,288. Preserving moist yeast and improving its fermenting qualities. E. Jacoby.
- U. S. Pat. 1,570,418. Preserving yeast. V. Wegener.
- U. S. Pat. 1,574,494. Preserving yeast. L. Lindemann.
- U. S. Pat. 1,596,279. Yeast. L. J. J. Lindemann.

U. S. Pat. 1,667,895. Preserving yeast. W. R. Johnston.

U. S. Pat. 2,085,857. Preserving fresh bakers' yeast. H. B. Hutchinson (to Standard Brands, Inc.).

U. S. Pat. 2,223,464. Stabilizing yeast. A. S. Schultz and C. N. Frey (to Standard Brands, Inc.).

Preparations, General

Austral. Pat. 14,061, Aug. 9, 1934. Bread. All In Flour and Yeast Co. Proprietary Ltd.

Austrian Pat. 14,062. Bread. All In Flour and Yeast Co. Proprietary Ltd.

Austrian Pat. 14,063. Bread. All In Flour and Yeast Co. Proprietary Ltd.

Austrian Pat. 139,428, Nov. 10, 1934. Compositions containing yeast or bacteria. O. Hummer.

Austrian Pat. 148,726, Feb. 25, 1937. Solidifying liquid or pasty preparations of animal or vegetable origin. A. Kronlik.

Austrian Pat. 149,531. May 10, 1937. Yeast. W. Vogelbusch.

Austrian Pat. 153,184, April 25, 1938. Yeast compositions. O. Hummer.

Brit. Pat. 10,937, May 5, 1911. Yeast preparations. Soc. anon. L'autolyse.

Brit. Pat. 21,708, Sept. 24, 1912. Yeast products. A. S. Rowe,

Brit. Pat. 147,581, July 8, 1920. Yeast; fertilizers. A. Vasseux.

Brit. Pat. 156,142, Dec. 31, 1920. Dispersoids; colloid powders, etc. H. Plauson and J. A. Vielle.

Brit. Pat. 162,978, July 24, 1920. Yeast. R. S. Bensley.

Brit. Pat. 181,334, May 1, 1922. Yeast. Fleischmann Co.

Brit. Pat. 197,868, July 12, 1922. Yeast preparations. J. M. Guthrie and W. McEwan & Co., Ltd.

Brit. Pat. 243,373, Nov. 19, 1924. Autolysis of yeast and other microorganisms. M. Kahn. E. Le Breton and G. Schaeffer.

Brit. Pat. 246,109, Jan. 16, 1925. Compositions formed from yeast and sugar. R. Willstatter and H. Sobotka.

Brit. Pat. 441,206, Jan. 15, 1936. Colloidal solutions. I. G. Farbenindustrie A. G.

Brit. Pat. 450,529, July 20, 1936. Yeast or protein preparations. C. Weizmann.

Brit. Pat. 516,343, Jan. 1, 1940. Treating yeast. C. Weizmann.

Brit. Pat. 518,889, March 11, 1940. Treating yeast. A. M. Fischer.

Brit. Pat. 538,191. July 24, 1941. Treating yeast. Emulsions Process Corp.

Fr. Pat. 635,038, May 25, 1927. Yeast. E. I. Levin.

Fr. Pat. 713,765, Mar. 24, 1931. Yeast. W. Eiselen.

Fr. Pat. 731,991, Dec. 9, 1931. Salt mixture. Nordmark-Werke G. m. b. H.

Ger. Pat. 519,588, Nov. 21, 1924. Autolysis of alcohol yeast. Société des Produits Alimentaires Azotés.

Ger. Pat. 542,667, Feb. 16, 1927. Lipoid substances from yeast. F. E. Merck. (K. Bitser, inventor);

Ger. Pat. 553,915, Sept. 1, 1928. Sterols from yeast. F. Hoffmann-La Roche & Co. A. G.

Ger. Pat. 586,805, Oct. 26, 1933. Yeast. M. Mizutani.

Ger. Pat. 661,929, June 30, 1938. Yeast. I. G. Farbenind. A. G.

Ger. Pat. 694,546, July 4, 1940. Glutathione from yeast. H. Goebel (to Schering A. G.).

Ger. Pat. 734,336, Mar. 18, 1943. Extracting the valuable constituents of yeast. E. Rabold and A. Hagedorn (to C. F. Boehringer & Söhne G. m. b. H.).

Swed. Pat. 64,650, Feb. 28, 1928. Yeast product. E. I. Levin.

Swed. Pat. 67,457, June 4, 1929. Yeast product. E. I. Levin.

Swiss Pat. 72,623, June 16, 1916. Yeast product. Diamalt A. G.

U. S. Pat. 889,082. Yeast preparation. J. E. Yost.

U. S. Pat. 1,411,088. Fertilizer containing yeast. W. B. Guy.

U. S. Pat. 1,489,684. Stable liquid autolyzed yeast. L. B. Allyn.

U. S. Pat. 1,840,756. Sterols from microorganisms such as yeast. E. Walz and O. Ambros (to Winthrop Chemical Co.).

U. S. Pat. 2,083,598. Highly enzymic yeast. I. A. Effront (to Standard Brands, Inc.).

U. S. Pat. 2,031,243. Use of mixed salts of sodium, potassium, magnesium and calcium, etc., in preparing and preserving foods, production of "mineral yeast," treatment of hides and skins, dyeing processes, etc. E. J. Wolf.

U. S. Pat. 2,053,596. Converting brewery yeast into bakery yeast. V. Bermann (to Bucaton A. G.).

U. S. Pat. 2,068,623. Yellow-colored oxidation enzyme compound from yeast, etc. O. Warburg (to Schering-Kahlbaum A. G.).

U. S. Pat. 2,116,482. Fermenting agent from yeast. C. v. Friedrich (to J. P. Rostan).

U. S. Pat. 2,324,012. Extraction of sterols, vitamins, etc., from compressed yeast, various fish oils, etc. J. E. Mitchell (to Colgate-Palmolive-Peet Co.).

U. S. Pat. 1,971,479. Treating waste yeast residues for the production of fertilizer material. I. Dubinbaum and L. R. Christie.

Production, General

Austrian Pat. 321-10, Jan. 13, 1910. Yeast. E. Pick.

Austrian Pat. 122,955, Jan. 15, 1931. Yeast. E. Jalowetz and M. Hamburg.

Austrian Pat. 148,460, Jan. 25, 1937. Yeast. E. Jalowetz and M. Hamburg. Addition to Austrian Pat. 145,628.

Austrian Pat. 149,901, June 10, 1937. Yeast. E. Kissling.

Brit. Pat. 11,617, May 19, 1913. A yeast or ferment. A. Molhant.

Brit. Pat. 13,193, June 6, 1913. Yeast. A. Pollak.

Brit. Pat. 19,379, Aug. 30, 1911. Yeast. J. Effront and A. Boidin.

Brit. Pat. 27,360, Nov. 24, 1909. Yeast. H. Braasch.

Brit. Pat. 27,845, Nov. 30, 1910. Yeast. K. Kruis.

Brit. Pat. 29,114, Dec. 13, 1909. Yeast. H. Braasch.

Brit. Pat. 150,968, Sept. 11, 1920. Yeast. A. J. M. Jensen.

Brit. Pat. 155,281, Dec. 15, 1920. Yeast. Verein der Spiritus-Fabriken.

Brit. Pat. 155,282, Dec. 15, 1920. Yeast. Verein der Spiritus-Fabriken.

Brit. Pat. 155,284, Dec. 15, 1920. Yeast. Verein der Spiritus-Fabriken.

Brit. Pat. 155,286, Dec. 15, 1920. Yeast. Verein der Spiritus-Fabriken.

Brit. Pat. 155,287, Dec. 15, 1920. Yeast. Verein der Spiritus-Fabriken.

Brit. Pat. 155,289, Dec. 15, 1920. Yeast. Verein der Spiritus-Fabriken.

Brit. Pat. 155,293, Dec. 15, 1920. Yeast. Verein der Spiritus-Fabriken.

Brit. Pat. 155,288, Dec. 15, 1920. Yeast. Verein der Spiritus-Fabriken.

Brit. Pat. 160,496, Nov. 21, 1919. Yeast. J. Effront.

Brit. Pat. 188,724, July 16, 1921. Separating microorganisms from liquids. W. Henneberg.

Brit. Pat. 195,347, Nov. 10, 1922. Yeast. Ward Baking Co.

Brit. Pat. 227,119, Dec. 31, 1923. Yeast. R. Hamburger and F. Hartig.

Brit. Pat. 284,643, Feb. 2, 1927. Arresting glucolysis of cells such as yeast or anaerobic bacteria. Schering-Kahlbaum A. G.

Brit. Pat. 291,443, June 3, 1927. Promoting action of enzymes. F. F. Nord.

Brit. Pat. 308,471, Mar. 21, 1928. Yeast. Norddeutsche Hofeindustrie A. G.

Brit. Pat. 318,649, Mar. 8, 1928. Yeast manufacture by use of sugar obtained by hydrolyzing peat. I. G. Farbenind A. G.

Brit. Pat. 340,637, Oct. 17, 1928. Yeast treatment. L. Elion and E. Elion.

Brit. Pat. 347,542, July 2, 1930. Yeasts. H. Windesheim and F. W. Thiele.

Brit. Pat. 365,086, Sept. 15, 1930. Yeast. R. Bertel and O. Schussler.

Brit. Pat. 388,513, Mar. 2, 1933. Salt mixtures for use in the treatment of organic materials, e.g., foods, textiles, hides, skins, in the production of yeast, for dye baths and for therapeutic purposes. Nordmark-Werke G. m. b. H.

Brit. Pat. 390,114, Mar. 30, 1933. Yeast. G. W. Kirby and C. N. Frey (to the International Yeast Co., Ltd.).

- Brit. Pat. 395,610, July 20, 1933. Yeast. H. Braasch and A. Braasch.
- Brit. Pat. 404,459, Jan. 18, 1934. Yeast. H. Braasch and A. Braasch.
- Brit. Pat. 431,688, July 8, 1935. Yeast. N. V. Industriële Maatschappij v. Noury and v. d. Lande.
- Brit. Pat. 444,929, Mar. 31, 1936. Yeast. M. Balla.
- Brit. Pat. 481,045, Mar. 4, 1938. Yeast. Aktieselskabet Dansk Gaerings-Industri.
- Brit. Pat. 483,774, April 26, 1938. Yeast. A. Pollak.
- Brit. Pat. 505,940, May 19, 1939. Recovering volatile substances from fermentation waste gases. M. Seidel.
- Brit. Pat. 523,019, July 3, 1940. Yeast. The International Yeast Co.
- Brit. Pat. 524,312, Aug. 2, 1940. Yeast. G. DeBecze.
- Brit. Pat. 526,065, Sept. 10, 1940. Isolating physiologically active materials from animal tissue. Armour & Co.
- Can. Pat. 408,283, Oct. 27, 1942. Destruction of the alcoholic-fermenting power of yeast. G. E. Miller, G. W. Kirby and C. N. Frey (to Standard Brands, Inc.).
- Danish Pat. 51,286, Feb. 17, 1936. Preserving organic substances. Aktieselskabet Dansk Gaerings-Industri.
- Danish Pat. 51,287, Feb. 17, 1930. Preserving organic substances. Aktieselskabet Dansk Gaerings-Industri. Addition to Danish Pat. 51,286.
- Fr. Pat. 349,844, Nov. 10, 1904. Yeast manufacture. Van den Hoff.
- Fr. Pat. 366,533, May 23, 1906. Yeast culture. Kruis et Kinghager, Austria.
- Fr. Pat. 370,631, Oct. 20, 1906. Yeast. Papellier.
- Fr. Pat. 635,038, May 25, 1927. Yeast. E. I. Levin.
- Fr. Pat. 647,492, Jan. 19, 1928. Yeast and alcohol. Aktieselskabet Dansk Gaerings-Industri.
- Fr. Pat. 647,493. Yeast and alcohol. Aktieselskabet Dansk Gaerings-Industri.

Fr. Pat. 648,151, Feb. 3, 1928. Yeast. Zellstoffabrik Waldhof and O. Luhrs.

Fr. Pat. 652,556, April 3, 1928. Fermentation. Deutsche Hydrierwerke A. G.

Fr. Pat. 653,214, Jan. 4, 1928. Arresting glucolysis. Schering-Kahlbaum, A. G.

Fr. Pat. 660,195, June 1, 1928. Yeast. K. A. Jacobsen.

Fr. Pat. 670,800, Jan. 6, 1928. Yeast. S. Sak.

Fr. Pat. 673,283, Oct. 4, 1927. Yeast. S. Sak.

Fr. Pat. 676,677, Sept. 28, 1928. Yeast. N. Marescu.

Fr. Pat. 676,835, June 20, 1928. Yeast. The International Yeast Co., Ltd. and A. J. C. Olsen.

Fr. Pat. 692,546, Mar. 21, 1930. Yeast. Kraus-Moskovits Vereinigte Industrie Anlagen A. G.

Fr. Pat. 709,458, April 16, 1930. Yeast. "Selbi".

Fr. Pat. 794,359, Feb. 14, 1936. Yeast. I. A. Effront and A. Popper.

Fr. Pat. 813,790, June 8, 1937. Yeast. N. V. Internationale Suiker en Alcohol Compagnie (International Sugar and Alcohol Co. "Isaco").

Fr. Pat. 843,964, July 13, 1939. Yeast for the manufacture of bread. Société Fould-Springer and Compagnie internationale de procédés de panification Itam.

Ger. Pat. 179,915, Nov. 9, 1904. Artificial yeast manufacture. G. Fritsche.

Ger. Pat. 180,594, Mar. 1, 1906. Process of manufacturing compressed artificial dry lees. K. Kruis, and F. Rinthoffer, Saichow-b. Prag. Addition to Ger. Pat. 173,231.

Ger. Pat. 480,076, April 12, 1922. Yeast. A. Pollak.

Ger. Pat. 520,853, Jan. 3, 1928. Degrading yeast. I. G. Farbenind. A. G. (O. Ambros and E. Walz, inventors). Addition to Ger. Pat. 517,499.

Ger. Pat. 543,774, July 5, 1928. Fermenting manioc root nodules. E. Langfeldt.

Ger. Pat. 582,099, Aug. 10, 1933. Yeast. "Salvis" A. G. für Nahrungsmittel and Chem. Ind. (R. Bertel, inventor).

Ger. Pat. 585,992, Oct. 14, 1933. Yeast. I. G. Farbenind. A. G. (F. Lange, inventor).

Ger. Pat. 607,234, Dec. 20, 1934. Yeast. S. Sak.

Ger. Pat. 620,995, Oct. 31, 1935. Yeast. S. Sak. Addition to Ger. Pat. 607,234.

Ger. Pat. 655,034, Jan. 6, 1938. Yeast. O. Hummer.

Ger. Pat. 667,903, Nov. 22, 1938. Yeast. Aktieselskabet Dansk Gaerings-Industri (B. Valdemar, inventor).

Ger. Pat. 670,742, Jan. 24, 1939. Yeast, etc. I. G. Farbenind. A. G.

Ger. Pat. 694,601, July 11, 1940. A method of cultivating fat-building microorganisms, particularly as applied to yeast. H. Stob.

Ger. Pat. 711,449, Aug. 28, 1941. Method for determining the quality of yeast, enzyme preparations, etc. E. Pfeiffer.

Ger. Pat. 727,723, Oct. 8, 1942. Yeast. M. P. J. M. Jansen (to Koninklijke Industriele Maatschappij voorheen Noury & van der Lande N.V.

Jap. Pat. 128,280, Jan. 13, 1939. Culturing yeast. Y. Matuyama.

Swed. Pat. 54,489, May 9, 1923. Manufacture of yeast. E. G. Kronberg.

Swed. Pat. 56,587, May 28, 1924. Manufacture of yeast, alcohol or both. H. T. Brahmer.

Swed. Pat. 56,899, July 16, 1924. Manufacture of yeast. E. G. Kronberg. Addition to Swed. Pat. 54,489.

Swed. Pat. 68,460, Nov. 19, 1929. Yeast. C. A. E. Rydbeck (E. Levin, inventor).

Swiss Pat. 154,496, Mar. 18, 1930. Yeast. M. Moskovits, and Kraus Moskovits Egyesült etc.

U. S. Pat. 855,276. Making yeast. J. Beumer.

U. S. Pat. 858,601. Yeast, M. Wallerstein.

U. S. Pat. 858,691. Preparing yeast. M. Wallerstein.

U. S. Pat. 863,976. Making yeast. C. H. Fort.

U. S. Pat. 1,124,500. Preparing yeast for the fermentation of molasses. A. Molhant.

U. S. Pat. 1,379,294. Media for beer propagation. R. Wahl.

U. S. Pat. 1,449,103. Yeast. F. Hayduck.

U. S. Pat. 1,449,104. Yeast. F. Hayduck.

U. S. Pat. 1,449,105. Yeast. F. Hayduck.

U. S. Pat. 1,449,106. Yeast. F. Hayduck.

U. S. Pat. 1,449,109. Yeast. F. Hayduck.

U. S. Pat. 1,449,110. Yeast. F. Hayduck.

U. S. Pat. reissue 15,716. Yeast. F. Hayduck.

U. S. Pat. 1,449,111. Yeast. F. Hayduck.

U. S. Pat. 1,449,112. Antiseptics in yeast propagation. F. Hayduck.

U. S. Pat. 1,449,113. Settling yeast. F. Hayduck.

U. S. Pat. 1,532,858. Yeast. R. F. Bacon.

U. S. Pat. 1,752,003. Yeast. K. A. Jacobsen (to Standard Brands, Inc.)

U. S. Pat. 1,783,521. Purifying yeast after use for fermentation. G. T. Reich.

U. S. Pat. 1,784,402. Monosaccharide material from hydrolysis of starch liquor. T. B. Wagner.

U. S. Pat. 1,834,788. Use of manihot root material for producing sugar, yeast and alcohol. E. Langfeldt.

U. S. Pat. 1,920,395. Yeast. E. Jellinek.

U. S. Pat. 2,013,456. Yeast. H. Braasch and A. Braasch (to Standard Brands, Inc.).

U. S. Pat. 2,016,791. Seed yeast for production of commercial yeast. H. Riley.

U. S. Pat. 2,032,443. Lactic acid production in mashes for use in yeast propagation, etc. A. S. Schultz, G. W. Kirby and C. N. Frey (to Standard Brands, Inc.).

U. S. Pat. 2,056,576. Yeast. S. Jansen.

U. S. Pat. 2,072,748. Baker-yeast production from beer yeast. E. Fuchs.

Production from Molasses

Brit. Pat. 246,002, May 20, 1925. Yeast. H. W. Dahlberg.

Brit. Pat. 280,861, Nov. 19, 1926. Baking yeast. H. Claasen.

Can. Pat. 303,995, Sept. 16, 1930. Yeast. G. S. Bratton (to Anheuser-Busch, Inc.).

Can. Pat. 406,584, Aug. 4, 1942. Yeast. E. A. Meyer and P. W. Chaffe (to Standard Brands, Inc.).

Fr. Pat. 661,225, Jan. 19, 1928. Yeast. "Selbi" (Soc. Exploit. Licences Brevets Ind.).

Fr. Pat. 750,998, Aug. 24, 1933. Yeast. G. Collette.

Ger. Pat. 536,989, Mar. 2, 1924. Yeast. Rheinischer Aktien Ver. für Zuckerfabrikation.

U. S. Pat. 1,580,999. Yeast. H. W. Dahlberg.

U. S. Pat. 1,634,348. Preserving cane juice and preparing it for use in yeast production. A. K. Balls.

U. S. Pat. 1,642,192. Propagating Saccharomyces disjunctus in a mash of crude West Indian cane molasses. A. K. Balls.

U. S. Pat. 1,774,406. Yeast and alcohol from molasses. F. Simmer (to Aktieselskabet Dansk Gaerings-Industri).

U. S. Pat. 1,745,693. Yeast. A. W. Hixson and E. A. Nils (to Standard Brands, Inc.).

U. S. Pat. 1,759,536. Yeast. A. K. Balls (1/3 ea. to A. W. Hixson and M. Nilsson).

U. S. Pat. 1,761,515. Yeast. A. K. Balls. (1/3 ea. to M. Nilsson and A. W. Hixson).

U. S. Pat. 1,775,800. Yeast. R. M. Allen and F. E. Timmer (to Vitamin Food Co.).

U. S. Pat. 1,784,618. Yeast. J. H. Barrington (to Standard Brands, Inc.).

U. S. Pat. 1,814,210. Yeast. C. N. Frey, A. Schultz and A. P. Harrison (to Standard Brands, Inc.).

U. S. Pat. 1,854,895. Acetone butyl alcohol fermentation. A. Fernbach (to Union Solvents Corp.).

U. S. Pat. 1,858,488. Yeast. A. K. Epstein.

U. S. Pat. 1,921,991. Alcoholic fermentation. F. M. Hildebrandt (to U. S. Industrial Alc. Co.).

U. S. Pat. 2,029,572. Bakers' yeast of low protein content. G. W. Kirby and C. N. Frey (to Standard Brands, Inc.).

U. S. Pat. 2,029,592. Bakers' yeast. A. Schultz (to Standard Brands, Inc.).

U. S. Pat. 2,166,339. Yeast. H. H. Browne.

U. S. Pat. 2,313,275. Yeast. H. H. Schopmeyer (to American Maize Products Co.).

Production from Sulfite Liquor

Ger. Pat. 580,339, July 8, 1933. Yeast. Aktiebolaget Båsta.

Ger. Pat. 610,657, Mar. 14, 1935. Yeast. Aktiebolaget Båsta.

Ger. Pat. 617,780, Aug. 26, 1935. Yeast. Aktiebolaget Båsta.

Ger. Pat. 661,260, June 15, 1938. Yeast. Holzhydrolyse A. G. (E. Farber, inventor).

Ger. Pat. 700,919, Dec. 5, 1940. Dulcitol. H. Fink and F. Just (to H. Fink).

Ger. Pat. 721,488, April 30, 1942. Fibers of proteinaceous substances. W. Kunzer. (to Süddeutsche Holzverzuckerungswerke A. G.).

Ger. Pat. 729,842, Dec. 3, 1942. Utilization of sulfite liquor for yeast growth. F. Neumann (to Zellstoffabrik Waldhof.)

Swed. Pat. 64,498, Jan. 31, 1928. Yeast. G. O. W. Heijkskjöld (to Aktiebolaget Båsta).

Swed. Pat. 66,030, Sept. 25, 1928. Sulfite cellulose waste liquor in yeast propagation. N. R. Nilsson (to Aktiebolaget Båsta).

Swed. Pat. 66,792, Feb. 19, 1929. Nutritive liquid for yeast fermentation, from sulfite cellulose waste liquor. G. O. W. Heijkskjöld (to Aktiebolaget Båsta).

Swed. Pat. 68,951, Mar. 4, 1930. Yeast. Aktiebolaget Båsta (G. O. W. Heijkskjöld, inventor).

Swed. Pat. 69,371, May 6, 1930. Yeast. Aktiebolaget Båsta (G. O. W. Heijkskjöld, inventor.)

Swed. Pat. 82,696, Feb. 26, 1935. Yeast from sulfite cellulose waste liquor. G. O. W. Heijkenskjöld.

U. S. Pat. 1,680,043. Utilizing acid waste sulfite liquor for the production of yeast. G. O. W. Heijkenskjöld (to Aktiebolaget Båsta).

U. S. Pat. 1,703,272. Yeast cultivation in treated waste sulfite liquor. G. O. W. Heijkenskjöld (to Aktiebolaget Båsta).

U. S. Pat. 1,757,568. Yeast production with use of waste sulfite liquor as a main raw material. G. O. W. Heijkenskjöld (to Aktiebolaget Båsta).

Pure Cultures

Fr. Pat. 667,844, Jan. 21, 1929. Yeast. E. I. Levin.

Ger. Pat. 511,111, Mar. 3, 1929. Yeast. Vulkan-Werke A. G. für Brauereibedarf.

Ger. Pat. 512,555, Mar. 6, 1927. Apparatus for fermenting wort and producing pure yeast cultures. Vulkan-Werke A. G. für Brauereibedarf.

Ger. Pat. 349,258, Feb. 27, 1922. Process and apparatus for the preliminary fermentation of wort under conditions of natural or pure yeast cultures. W. Greiner, Münster i. W.

Ger. Pat. 705,763, April 3, 1941. Yeast cultures. K. Vierling, A. Rieche, G. Hilgetag and R. Grützner. (to I. G. Farbenindustrie A. G.).

U. S. Pat. 1,623,896, Apparatus for culture of ferments, yeasts, etc. C. Vigreux.

U. S. Pat. 2,147,271. Apparatus for pure-yeast culture. R. Schwarz and A. R. Erda (to Schwarz Laboratories Inc.).

U. S. Pat. 2,150,329. Pure yeast cultures. E. L. Kitzmeyer.

Stimulants for Propagation

Australian Pat. 114,926, Mar. 23, 1942. Process for growing yeast. M. C. H. Deloffre.

Austrian Pat. 111,532, July 15, 1928. Activating yeast. E. Pribram and H. Wertheim.

Austrian Pat. 121,243, Sept. 15, 1930. Activating metals or alloys. O. Ried.

Austrian Pat. 128,048, Dec. 15, 1931. Yeast. E. Jalowetz and M. Hamburg.

Austrian Pat. 145,628, May 11, 1936. Treatment of beer yeast. E. Jalowetz and M. Hamburg.

Brit. Pat. 28,695, Dec. 15, 1906. Stimulant for yeast production. R. Paul and J. S. Remington.

Brit. Pat. 532,013, Jan. 15, 1941. Yeast Stimulant. Standard Brands, Inc.

Brit. Pat. 536,510, May 16, 1941. Stimulating the activity of yeast. Standard Brands, Inc.

Danish Pat. 35,550, Jan. 25, 1926. Yeast. Mellemeuropaeisk Patent-Financieringsselskab.

Ger. Pat. 725,024, July 30, 1942. Yeast. J. C. Matti (to Compagnie internationale de procédés de panification "itam" and Société Fould-Springer).

Ger. Pat. 730,231, Dec. 10, 1942. Nutrient solution for yeast. O. Claren and G. Wietzel (to I. G. Farbenind. A. G.).

Ger. Pat. 731,131, Dec. 31, 1942. Producing yeast. F. Lange and A. Bohne (to I. G. Farbenind. A. G.).

Ger. Pat. 733,598, Feb. 25, 1943. Method for enhancing the multiplication of growing yeast. E. Stich and E. Kottlors.

U. S. Pat. 1,634,310, Yeast stimulant. J. Takamine and N. Fujita.

U. S. Pat. 1,651,027. Increasing the activity of yeast. A. W. Hixson and A. K. Balls.

U. S. Pat. 1,680,827. Yeast stimulant for use in dough. T. B. Wagner.

U. S. Pat. 2,087,059. Promoting yeast growth by use of hormones. E. Kottlors.

U. S. Pat. 2,322,287. Yeast. R. E. Eakin and R. J. Williams (to Standard Brands, Inc.).

U. S. 2,333,955. Yeast production. A. S. Schultz, L. Atkin and C. N. Frey (to Standard Brands, Inc.).

Therapeutic Preparations

Australian Pat. 15,787; Sept. 20, 1928. Medicinal preparation. E. O. Farley and H. Staley (to E. O. Farley, Ltd.).

Austrian Pat. 140,659, Feb. 25, 1935. Medicinal or alimentary yeast. O. Freund and M. Block.

Brit. Pat. 5,571, Mar. 8, 1909. Highly ferriferous medical preparation from yeast. A. Ascoli, Milan, Italy.

Brit. Pat. 230,404, Nov. 30, 1923. Medicinal products from yeast and methylene blue, etc. Haco-Ges. Akt.Ges.

Brit. Pat. 230,329, Nov. 30, 1923. Albumin-dye compounds for medicinal use. Haco-Ges. Akt. Ges. Addition to Brit. Pat. 208,699.

Brit. Pat. 231,120, June 21, 1924. Medicinal compounds from yeast and dyes. Haco-Ges. Akt. Ges.

Brit. Pat. 239,302, June 11, 1924. Antitoxins prepared with yeast. R. H. Deutschmann.

Brit. Pat. 271,492, May 20, 1926. Vegetable medicinal products similar to hormones from glands. Chemische Fab.ik auf Aktien vorm. E. Schering.

Brit. Pat. 276,926, May 10, 1927. Medicinal tablets formed of yeast and chocolate. C. Doctor.

Brit. Pat. 285,083, Feb. 12, 1927. Antirachitic preparations. W. Merck, K. Merck, L. Merck, W. Merck and F. Merck (trading as the firm E. Merck).

Brit. Pat. 304,895, Dec. 24, 1927. Therapeutic composition comprising iron and yeast. Matro Ges.

Brit. Pat. 333,159, April 2, 1929. Medicinal preparations. Soc. Anon. Ind. chim. à Bâle, W. Merki and P. Scheidegger.

Brit. Pat. 345,669, Nov. 22, 1929. Vitamin products from yeast. I. G. Farbenind. A. G.

Brit. Pat. 354,611, Oct. 6, 1930. Iodized yeast. I. G. Farbenind. A. G.

Brit. Pat. 427,488, April 25, 1935. Lactic bacillus and yeast cultures for therapeutic use. W. L. Owen.

Brit. Pat. 435,978, Oct. 2, 1935. Food for diabetics. K. Wille and E. Fritsch.

Ger. Pat. 248,886, Feb. 26, 1911. Iron-iodine-containing yeast. Chem. Fab. Grünau, Landshoff & Meyer, Akt. Ges. and R. May.

Ger. Pat. 485,199, Nov. 13, 1925. Therapeutic composition containing iron and yeast. Matro G. m. b. H.

Ger. Pat. 528,258, Jan. 24, 1930. Medicinal yeast preparations containing iodine. Norddeutsche Hefeindustrie A. G.

Ger. Pat. 530,309, Dec. 25, 1928. Yeast products. I. G. Farbenind. A. G. (M. Bockmühl, W. Ludwig and G. Ehrhart, inventors).

Ger. Pat. 672,078, Feb. 18, 1939. Therapeutic preparations. I. G. Farbenind. A. G.

Hung. Pat. 100,696, Aug. 4, 1927. Antirachitic preparation from yeast. G. Feher.

Hung. Pat. 101,496, Dec. 27, 1928. Biologically active yeast preparations. M. Moskovits.

Russ. Pat. 56,447, Jan. 31, 1940. Vitamin B₂. A. V. Trufanov.

U. S. Pat. 1,162,908. Obtaining vitamins from yeast, rice-bran etc. C. Funk.

U. S. Pat. 1,386,252. Yeast containing dentifrice. W. T. Green.

U. S. Pat. 1,454,372. A therapeutic compound of tannin and yeast. R. Berendes and F. Lange.

U.S. Pat. 1,488,815. Vitamin preparation from yeast. I. F. Harris.

U. S. Pat. 1,549,208. Antiseptic and nutritive compositions from yeast and acridine compounds. W. Moser.

U. S. Pat. 1,581,826. Organic arsenic compounds combined with yeast. O. Bally.

U. S. Pat. 1,710,584. Therapeutic composition comprising iron and yeast. C. Massatsch (to Matro G. m. b. H.).

U. S. Pat. 1,724,027. Antiseptic, from beer yeast, suitable for use in autolyzing operations. M. Kahn, E. Le Breton and G. Schaeffer (to Soc. française des produits alimentaires azotés).

U. S. Pat. 1,919,612. Yeast with laxative properties. O. Block and O. Freund.

U. S. Pat. 1,975,169. Vitamin concentrate from brewery yeast. A. B. O. Norrbin.

Treating Yeast Plant Wastes

Brit. Pat. 246,278, Dec. 18, 1924. Treating brewery waters, etc. H. N. Murphey.

Brit. Pat. 284,267, Jan. 26, 1927. Treating sewage and other waste products. Aktieselskabet Dansk Gaerings Industri.

U. S. Pat. 2,232,294. Magnetic flocculation for removing suspended matter from whey, distillery and yeast plant wastes, straw-board mill wastes, etc. O. M. Urbain and W. R. Stemen (to C. H. Lewis).

Treating Hides

Brit. Pat. 235,678, April 10, 1924. Treating hides and skins with auto-digested yeast preparatory to tanning. D. McCandlish and W. R. Atkin.

Fr. Pat. 786,658, Sept. 7, 1935. Yeast. N. Balla.

Ger. Pat. 710,789, Aug. 14, 1941. Depilating hides by "soaking in cultures of yeast plants or self-digested yeast. E. Bohme (to A. Th. Bohme, Chem. Fabrik).

Ger. Pat. 721,885, May 7, 1942. Depilating hides. E. Bohme. (to A. Th. Bohme Chem. Fabrik).

U. S. Pat. 1,570,383. Autolyzed yeast in leather manufacture. D. McCandlish and W. R. Atkin.

Two Stage Process for Growing

Brit. Pat. 264,795, Jan. 21, 1926. Yeast. J. Weber.

Brit. Pat. 349,201, Mar. 20, 1930. Yeast. M. Moskovits, etc.

Brit. Pat. 354,118, Oct. 22, 1929. Yeast. E. Jellinek.

Brit. Pat. 411,611, June 14, 1934. Yeast; alcohol. E. Stich.

Ger. Pat. 588,738, Nov. 25, 1933. Yeast. Pfeifer and Langen A. G.

U. S. Pat. 1,722,803. Bakers' yeast. E. Klein (to The Fleischmann Co.).

U. S. Pat. 1,725,583. Yeast. L. J. Howells.

U. S. Pat. 1,917,283. Yeast. J. F. Wroten.

U. S. Pat. 1,881,557. Yeast. G. O. W. Heijkenskjöld (to Aktiebolaget Båsta).

Effect of Nitrophenols

Studies on toxicity. E. I. Fulmer and R. E. Buchanan. J. Gen. Physiol. 6, 77-89 (1923).

Action of dinitrophenols on the growth and metabolism of bakers' yeast. L. Genevois and R. Saric. Compt. rend. soc. biol. 111, 181-3 (1932).

Action of dinitrophenols on the respiration of yeasts and lactic fermentation bacteria. L. Genevois and R. Saric. Compt. rend. soc. biol. 117, 368-9 (1934).

The effect of 2, 4-dinitrophenol on the oxygen consumption of yeast. J. Field, 2nd., A. W. Martin and S. M. Field. J. Cellular Comp. Physiol. 4, 405-20 (1934).

Yeast and dinitrophenol. L. Plantefol. Ann. ferment. 1, 149-61 (1935).

Action of 2,4-dinitrophenol on French bakers' yeast (Springer's yeast). L. Genevois and R. Saric. Compt. rend. soc. biol. 118, 1354-6 (1935).

Action of 2,4-dinitrophenol on washed yeast. J. Field and A. W. Martin. Compt. rend. soc. biol. 119, 458-60 (1935).

The effect of 2,4-dinitrophenol on the cellular oxidations of yeast. L. Plantefol. Ann. physiol. physicochim. biol. 11, 32-53 (1935).

Some evidence that 2,4-dinitrophenol and 4,6 dinitro-o-cresol have a common site of action on the yeast cell. J. Field, 2nd and E. G. Tainter. Arch intern. pharmacodynamie 54, 184-9 (1936).

The action of 1,2,4-dinitrophenol on the respiration of yeast. L. Markovićev. Glas. Srpske Kral'evske Akad., Belgrade, Ser. I, 180, No. 89, 275-83 (1939); Chem. Abstr. 35, 7109 (1941).

Biochemical action of dinitro derivatives on the metabolism of yeast cells. L. Vandendriessche. Enzymologia 10, 69-78 (1941).

Nucleic Acid

The nucleic acid of yeast. P.A. Levene. Biochem. Z. 17, 120-31 (1909).

Nucleinic acid from yeast. I. P. A. Levene and W. A. Jacobs. Ber. 42, 2474-8 (1909); II. Ibid. 2703-6; III. Ibid. Ber. 43, 3150-63 (1910).

The composition of nucleic acid from yeast. K. Kowalevsky. Z. physiol. Chem. 69, 240-64 (1910).

Yeast nucleic acid. IV. P. A. Levene and W. A. Jacobs. Ber. 44, 1027-32 (1911).

Action of yeast on yeast nucleic acid. S. Amberg and W. Jones. J. Biol. Chem. 13, 441-6 (1913).

Yeast nucleic acids. V. Structure of pyrimidine nucleosides. P. A. Levene and F. B. LaForge. Ber. 45, 608-20 (1912).

Determination of the nuclein content of yeast. C. A. Lubsen. Pharm. Weekblad 55, 1625-8 (1918).

Yeast nucleic acid. S. J. Thannhauser and P. Sachs, Z. physiol. Chem. 109, 177-88 (1920).

Muscle adenylic acid and yeast adenylic acid. G. Embden and G. Schmidt. Z. physiol. Chem. 181, 130-9 (1929).

A hydrophile sol of very low viscosity, the sodium nucleate sol of yeast. H. G. Bungenberg de Jong and N. F. deVries. Rec. trav. chim. Pays-Bas 49, 658-61 (1930).

The biological action of adenylic acid obtained from yeast. L. de Caro. Arch. sci. biol., Naples, 16, 563-74 (1931).

Muscle adenylic acid and yeast adenylic acid. G. Embden and G. Schmidt. Z. physiol. Chem. 197, 191-2 (1931).

Muscle adenylic acid from yeast and yeast adenylic acid from pancreas. The nomenclature of adenylic acids. F. Lindner. Z. physiol. Chem. 218, 12-16 (1933).

The very frequent presence of coproporphyrin in preparations of nucleic acid extracted from beer yeast. C. Dhéré and A. Roche. *Compt. rend. soc. biol.* 114, 449-52 (1933).

Comparative studies on the nucleic acid in saké pressed cake and beer yeast. I. M. Kimura. *J. Soc. Chem. Ind. Japan* 36, Suppl. binding, 50-1, (1933); II. *Ibid.* 85-6; III. The preparation of nucleic acid by the use of Japanese acid clay. *Ibid.* 37, 8-9 (1934).

The boric acid reaction and the structure of nucleic acid. K. Makino. *Z. physiol. Chem.* 233, 186-8 (1935).

Acid production in autolyzed yeast. II. Breakdown of nucleic acid by autolyzed yeast. H. Haehn and H. Leopold. *Fermentforsch.* 14, 539-48 (1935).

Yeast nucleic acid and its cleavage products. F. C. Memmen. *Festschr. E. C. Barell* 1936, 520-7 (1936); *Chem. Abstr.* 31, 2619 (1937).

Chemical and biological research on sodium nucleates of various origins. II (spleen, yeast). P. Donini. *Rass. clin. terap. sci. affini* 36, 78-91 (1937).

The presence of thymine in the nucleic acid extracted from yeast. Cytologic and chemical investigations. B. Delaporte and N. Roukhelman. *Compt. rend.* 206, 1399-1401 (1938).

Phosphorylation of adenosine by yeast and its function in alcoholic fermentation. III. Formation of adenosine and decomposition of nucleic acid in yeast. P. Ostern, J. Terszakowec and St. Hubl. *Z. physiol. Chem.* 255, 104-25 (1938).

Alloxazine adenine dinucleotide from yeast. O. Warburg, W. Christian and A. Griese. *Biochem. Z.* 297, 471 (1938).

Di-(adenosine 5' phosphoric acid), and adenine dinucleotide of yeast. W. Kressling and O. Meyerhof. *Biochem. Z.* 296, 410-25 (1938).

Biochemical studies on a nutritional yeast preparation. I. T. Tadokoro and N. Takasugi. *J. Agr. Chem. Soc. Japan* 16, 1041-4 (1940).

Increased yield of nucleic acid-like substance from irradiated yeast. J. R. Loofbourow, Sister M. E. Englert and Sister C. M. Dwyer. Nature 148, 113-14 (1941).

Increased yield of nucleic acid from irradiated yeast. J. R. Loofbourow, A. M. Webb, D. G. Loofbourow and H. Lisco. Nature 149, 328-9 (1942).

Constitution of yeast ribonucleic acid. VII. Diffusion coefficients and molecular weights. W. E. Fletcher, J. M. Gulland, D. O. Jordan and H. E. Dibben. J. Chem. Soc. 1944, 30-3 (1944).

Action on Certain Organic Compounds

On the synthesis of organic phosphorus compounds in killed yeast cells. L. Iwanoff. Z. physiol. Chem. 50, 281-88 (1907).

Reduction of cinnamic aldehyde by yeast. Fermentation of benzylpyrrolacemic acid. E. Rona. Biochem. Z. 67, 137-42 (1914).

Valeraldehyde and amyl alcohol fermentation of methylethylpyrrolacemic acid. C. Neuberg and W. H. Peterson. Biochem. Z. 67, 32-45 (1914);

Biochemical cleavage of secondary and tertiary amines by yeasts and molds. F. Ehrlich. Biochem. Z. 75, 417-30 (1916).

The oxidative action of yeast. E. Farber. Biochem. Z. 78, 294-6 (1917).

Phytochemical reductions. IX. Transformation of thiosulfate into hydrogen sulfide and sulfite by yeast. C. Neuberg and E. Welde. Biochem. Z. 67, 111-8 (1914); XIV. Hydrogenation of a ketone by yeast. Transformation of methylheptenone into methylheptenol. C. Neuberg and A. Lewite. Ibid. 91, 257-66 (1918); XV. The transformation of acetaldo into optically active β -butyleneglycol by yeast. C. Neuberg and E. Kerb. Ibid. 92, 96-110 (1918); XVI. The transformation of citral into geraniol by yeast. Ibid. 111-23.

Method of formation of natural succinic acid. III. The transformation of aldehydopropionic acid into succinic acid by yeasts. C. Neuberg and M. Ringer. Biochem. Z. 91, 131-6 (1918).

Carboligase. IV. Biosynthetic carbon chain union in fermentation processes. C. Neuberg and H. Ohle. Biochem. Z. 128, 610-8 (1922).

Further experiments on the destruction of lactic acid by yeast. O. Furth and F. Lieben. Biochem. Z. 132, 165-79 (1922).

Lactic acid destruction by yeast and blood cells. O. Furth and F. Lieben. Biochem. Z. 128, 144-68 (1922).

Destruction of lactic acid by yeast cells. F. Lieben. Österr. Chem. Ztg. (n.s.) 25, 87-90 (1922).

The action of pyrotartaric acid and acetaldehyde toward yeast aerated with oxygen. F. Lieben. Biochem. Z. 135, 240-7 (1923).

The influence of oxygen on the assimilatory and dissimilatory activity of yeast. I. The action of glucose. H. Lundin. Biochem. Z. 141, 310-69 (1923); II. The action of monosaccharides. Ibid. 310-69; III. The action of added alcohol in yeast suspensions. H. Lundin. Ibid. 142, 454-62 (1923).

The behavior of pyrimidine derivatives in the organism. I. The action of yeast on pyrimidine derivatives. A. Hahn and W. Lintzel. Z. Biol. 79, 179-90 (1923).

The action of living yeast on lactic acid. K. Myrback and B. Everitt. Z. physiol. Chem. 139, 272-80 (1924).

Biochemical transformation of unsymmetrical dichloroacetone into optically active ω, α -dichloroisopropyl alcohol. H. K. Sen. Biochem. Z. 151, 51-3 (1924).

The reduction of unsymmetrical dichloroacetone by yeast. H. K. Sen. Quart. J. Indian Chem. Soc. 1, 1-8 (1924).

The behavior of yeast shaken in oxygen toward β -hydroxybutyric acid. J. Marian. Biochem. Z. 150, 281-9 (1924).

Gallotannin. XIV. Action of yeast on gallotannin. M. Nierenstein, C. W. Spiers and A. C. Hadley. J. Am. Chem. Soc. 47, 1726-8 (1925).

Behavior of pyrimidine derivatives in the organism. A. Hahn and W. Haarmann. Z. Biol. 85, 275-9 (1926).

The destruction of malic acid by different types and strains of yeast from grapes and other fruits. A. Osterwalden. Centr. Bakt. Parasitenk. Abt. II, 67, 289-96 (1926).

Action of yeast on lactic acid. D. Hoffert. Biochem. J. 20, 358-62 (1926).

Production of acetoin and 2, 3-butyleneglycol by microbes and their distribution in fermentation products. M. Yamada and K. Kurono. Bull. Agr. Chem. Soc. Japan 3, 83-6 (1927).

The formation of pure d(-)-lactic acid by fresh and dry yeast as well as of dl-lactic acid by yeast juice. C. Neuberg and M. Kobel. Biochem. Z. 182, 470-87 (1927).

The transformation of methylbenzoylcarbinol by fermenting yeast. C. Neuberg and W. Komarewsky. Biochem. Z. 182, 285-90 (1927).

The relation between the production of lactic acid and the growth of yeast. E. Aubel. Compt. rend. 188, 578-80 (1929).

The special behavior of the α -mannose in the biochemical process of phosphorylation. I. S. Neuberg and C. Ostendorf. Biochem. Z. 221, 154-65 (1930).

The experimentally induced asymmetric cleavage of dl-borneol phosphate by means of yeast or Taka-phosphatase. M. Kuroya. Biochem. Z. 225, 452-63 (1930).

Effect of various yeasts on the growth and physiological properties of lactic acid bacteria and molds. O. K. Palladina and V. A. Masyukevich. Festschr. Orla-Jensen 1931, 89-93 (1931).

The direct oxidation of sugar by yeast. K. Trautwein and K. Weigand. Biochem. Z. 240, 423-9 (1931).

Monoiodo- and monobromo-acetic acid poisonings in carbohydrate breakdown. R. Nilsson, K. Zeile and H. v. Euler. Z. physiol. Chem. 194, 53-68 (1931).

The process involved in the esterification of sugar with phosphoric acid by yeast, especially the changes occurring during the period of total esterification. S. Veibel. Biochem. Z. 239, 350-73 (1931).

Influence of yeast on fumaric acid. K. P. Jacobsohn. Biochem. Z. 239, 449-55 (1931).

Acetoacetic acid and yeast. E. Friedmann. Naturwissenschaften 19, 400 (1931); Biochem. Z. 243, 125-44 (1931).

Biochemical hydrogenation of fumaric acid by plant cells and yeast. K. P. Jacobsohn. Biochem. Z. 234, 401-18 (1931).

Thienylglyoxal and its biochemical dismutation. Shi Ichiro-Fujise. Biochem. Z. 236, 241-6 (1931).

Phytochemical reduction of oxalacetic acid to malic acid. Shin-Ichiro Fujise. Biochem. Z. 236, 231-6 (1931).

Conditions for the reaction of acetic acid decomposition by yeast. E. Friedmann. Biochem. Z. 244, 42-56 (1932).

Biochemical esterification of arsenic acid by yeast. A. S. Braunstein and M. M. Levitov. Naturwissenschaften 20, 471 (1932).

A quantitative study for the decomposition of acetic acid and of the formation of β -hydroxybutyric acid by yeast. E. Friedmann. Biochem. Z. 244, 57-68 (1932).

Acetic acid decomposition and β -hydroxybutyric acid formation by fermenting yeast. Studies on β -hydroxybutyric acid determined by oxidation. E. Friedmann. Biochem. Z. 244, 69-75 (1932).

Studies on the biological action of arsenic. II. Experiments on the biological esterification of arsenate by yeast. A. E. Braunstein and M. M. Levitov. Biochem. Z. 252, 56-63 (1932).

Mechanism of oxidation processes. XXXII. Enzymic oxidation of acetic acid by yeast. H. Wieland and R. Sonderhoff. Ann. 499, 213-28 (1932).

Enzymic hydrolysis of malto- and lacto- bionic acids. C. Neuberg and E. Hofmann. Biochem. Z. 252, 434-9 (1932).

Phytochemical reduction of 1-hydroxy-2-ketoheptane $\sqrt{\text{heptan-1-}^3\text{2-17}}$. P. A. Levene and A. Walti. J. Biol. Chem. 98, 735-8 (1932).

Transformation of acetoacetaldehyde by yeast. S. Grzycki. Biochem. Z. 265, 195-8 (1933).

Behavior of the amino acid-aldehyde system towards oxygen-saturated yeast. F. Lieben and V. Getreuer. Biochem. Z. 269, 69-76 (1934).

Decomposition of lactic acid by yeast enzymes. III. A. Hahn and M. Durr. Z. Biol. 95, 298-306 (1934); IV. A. Hahn, H. Niemer and B. Freytag. Ibid. 96, 253-60 (1935).

Decomposition of l-monophosphoglyceric acid by fresh bottom yeast. W. Schuchardt and A. Vercellone. Biochem. Z. 272, 434 (1934).

Biochemical dehydrogenations. I. Hydrogenation of unsaturated α -keto acids, aldehydes and alcohols by fermenting yeasts. F. G. Fischer and O. Wiedemann. Ann. 513, 260-80 (1934).

Triose-fermenting yeasts. C. Neuberg and E. Hofmann. Naturwissenschaften 23, 484-6 (1935).

The mechanism of the reaction of substrates with oxygen. II. F. J. Ogston and D. E. Green. Biochem. J. 29, 2005-12 (1935).

Phosphorylation with living yeast. C. Neuberg. Biochem. Z. 280, 163-6 (1935).

Vitamin C (l-ascorbic acid) production through the symbiosis of acetic acid bacteria and yeast. S. Hermann and N. Fodor. Biochem. Z. 276, 323-5 (1935).

Mechanism of oxidation processes. XLII. The degeneration of citric acid. H. Wieland and R. Sonderhoff. Ann. 520, 150-6 (1935).

Phytochemical reduction of lactaldehyde. E. Ochiai and K. Miyaki. Biochem. Z. 282, 293-6 (1935).

Biochemical hydrogenations. II. Hydrogenations of unsaturated ketones by fermenting yeast. F. G. Fischer, O. Wiedmann and W. Robertson. Ann. 520, 52-70 (1935); III. The dehydrogenation of conjugated double bonds by fermenting yeasts. F. G. Fischer and O. Wiedemann. Ibid 522, 1-16 (1936).

Styryl 430 and the metabolism of glucose by yeast. Lack of sensitivity of the fermentation to 0.02 molar sodium fluoride. Y. Pourbaix. Compt. rend. soc. biol. 127, 364-6 (1936).

Phytochemical reduction of triketopentane. C. Neuberger and W. M. Cahill. Enzymologia 1, 142-4 (1936).

The reaction of iodoacetate and of iodoacetamide with various sulfhydryl groups, with urease and with yeast preparations. C. V. Smythe. J. Biol. Chem. 114, 601-12 (1936).

Styryl 430 and the metabolism of glucose by yeast. Extraction of an "antistyryl" from boiled yeast. Y. Pourbaix. Compt. rend. soc. biol. 127, 1475-7 (1938).

The phosphorylation of adenosine by yeast and the role of this process in fermentation. II. P. Ostern, T. Baranowski and J. Terszakowicz. Z. physiol. Chem. 251, 258-84 (1938).

The formation of glucose-1-phosphoric acid in extracts of mammalian tissues of yeast. G. T. Cori, S. P. Colowick and C. F. Cori. J. Biol. Chem. 123, 375-80 (1938).

Synthesis of 2, 4, 6-trimethylglucose and its relation to yeast glucan. K. Freudenberg and E. Plankenhorn. Ann. 536, 257-66 (1938).

Action of yeast on amino acids. S. Edlbacher. Chem. Abstr. 33, 6352 (1939).

Oxidation of l(-) aspartic and l(+) glutamic acids by Hemophilus parainfluenzae: Preparation of pyridine nucleotides from bakers' yeast by the method of Warburg and Christian. J. R. Klein. J. Biol. Chem. 134, 43-57 (1940).

Biological cleavage of azo dyes by yeast. H. Riedel. Klin. Wochschr. 21, 569-71 (1942).

Biological degradation of acetic acid. I. Induction period with impoverished yeast. F. Lynen. Ann. 552, 270-306 (1942); II. The action of malonic acid upon the degradation of acetic acid by yeast. Ibid. 554, 40-68 (1943).

Oxidation and Reduction

Oxidation and reductions at the expense of water produced by dead yeast. V. Palladin and E. Lovchinovskii. Biochem. Z. 65, 129-39 (1914).

Knowledge of biological oxido-reductions. H. v. Euler and R. Nilsson. Arkiv Kemi Mineral. Geol. 9, No. 29, 1-6 (1926)(in German).

The oxidoreductase of yeast. A. Lebedev. Fermentforsch. 9, 74-83 (1926); J. Russ. Phys. Chem. Soc., khim, 58, 184-95 (1926).

Reactions of hexoses in the animal organism. H. v. Euler and R. Nilsson. Arkiv Kemi Mineral. Geol. 9, No. 38, 6 pp. (1927).

Comparative measurements of oxido-reduction and of carbon dioxide evolution by yeast enzymes. R. Nilsson and B. Jansson. Z. physiol. Chem. 169, 73-90 (1927).

Oxidation-reduction potential of yeast, Bacterium coli and of media in which these organisms are growing. E. Aubel and L. Genevois. Compt. rend. 184, 1676-8 (1927).

The oxidation-reduction potential of yeast, facultative anaerobes, strict anaerobes and of the media in which the organisms grow. E. Aurel, E. Aubertin and L. Genevois. Ann. physiol. physicochim. biol. 5, 1-11 (1929).

Biological oxido-reduction. H. v. Euler and R. Nilsson. Skand. Arch. Physiol. 59, 201-16 (1930).

Oxidation reduction potential of complex iron compounds in yeast. T. B. Coolidge. Nature 128, 223 (1931).

Note on the reactivation of reductase in washed yeast preparations. A. Harden and M. G. MacFarlane. Biochem. J. 25, 818-821 (1931).

Variations in the rH of the culture media caused by yeast at different pH values. L. Nicolini. Giorn. biol. applicata ind. chim. 1, 172-8 (1931).

Reduction of hyposulfite by yeasts. M. P. Korsakova. Mikrobiologiya 2, 251-9 (1933).

The potentiometric conception of the oxidation-reduction process in a fermenting yeast extract. F. Lipmann. Biochem. Z. 274, 329-40 (1934).

The effect of the oxidation-reduction character of the medium on initiation of yeast growth. J. J. Reid and I. L. Baldwin. J. Bact. 27, 29-30 (1934).

Discrepancies in the value of the aerobic reducing intensity of the yeast cell and the starfish egg. L. V. Beck. Science (n.s.) 81, 469-70 (1935).

Oxidation-reduction potential in the fermentation industries. R. Lechner. Z. Spiritusind. 58, 204, 207, 211-14 (1935).

Oxidation-reduction characteristics and yeast-growth initiation in a medium containing small amounts of wort. D. R. Colingsworth and J. J. Reid. J. Bact. 30, 653 (1935).

The oxidation-reduction potential of yeast suspensions and some associated problems. C. Fromageot and P. Desnuelle. Biochem. Z. 279, 34-9 (1935); Ibid. Ann. univ. Lyon, ser. 3 sci., sec B, 1, 61-8 (1936).

Reduction intensity of living cells. A. J. Kluyver and J. C. Hoogerheide. Proc. Acad. Sci. Amsterdam 39, 298-306 (1936).

Oxidation-reduction potential of the cytochrome of baking yeast. G. de Toeuf. J. chim. phys. 34, 740-55 (1937).

Reduction-oxidation potential of a suspension of living yeast cells. T. Kakukawa. Sci. Repts. Tôhoku Imp. Univ., biol., 12, 551-71 (1938) (in English).

Determination of rH of yeast cells (S. cerevisiae). A. Guilliermond and R. Gautherst. Compt. rend. soc. biol. 130, 1202-9 (1939).

Oxidation systems of top and bottom yeasts. H. v. Euler, H. Hellstrom and G. Gunther. Z. physiol. Chem. 258, 47-56 (1939).

The chemical equations of the phytochemical reductions by fermenting yeast cells and their relationship to the Pasteur effect. A. Gottschalk. Austral. J. Exptl. Biol. Med. Sci. 20, 173-85 (1942).

Oxidation, reductions and the Pasteur effect in yeast cells. A. Gottschalk. Austral. J. Sci. 5, 90-3 (1942).

Cell Permeability

The permeability of the yeast cell. S. G. Paine. Proc. Roy. Soc. London B84, 289-307 (1911).

The action of dissolved substances upon the fermentation of yeast. A. Harden and S. G. Paine. Proc. Roy. Soc. London B84, 448-59 (1912).

Determinations of permeability in Saccharomyces cerevisiae (pressed yeast of the Ned. Gist-en Spiritusfabriek). N. L. Sohngen and K. T. Wieringa. Akad. Wet. Amsterdam Versl. nat. 34, 999-1003 (1925).

The mechanism of enzyme action. II. Further evidence confirming the observations that ethylene increases the permeability of cells and acts as a protector. F. F. Nord and K. W. Franke. J. Biol. Chem. 79, 27-51 (1928).

The cell wall and the Gram reaction. V. Burke and M. W. Barnes. J. Bact. 18, 69-92 (1929).

Experiments on fermentation produced by yeast cells whose permeability has been modified. K. Meyer. Biochem. Z. 221, 418-24 (1930).

Methylene blue staining of yeast cells and its relation to hydrogen-ion concentration and to the problem of permeability. H. Fink and F. Weinfurtner. Wochschr. Brau. 47, 89-93, 110-6, 124-7 (1930).

Quantitative estimations of permeability. K. T. Wieringa. Protoplasma 8, 522-84 (1930).

Staining yeast cells with methylene blue and its relation to hydrogen ion concentration and permeability. H. Fink and F. Weinfurtner. Wochschr. Brau. 48, 159-62 (1931).

Staining yeast cells with methylene blue and studies on the permeability of the cell membrane. IV. H. Fink and R. Kuhles. Wochschr. Brau. 50, 185 (1933).

The first beginnings of sugar assimilation. Experiments on yeast cells. E. Wertheimer. Protoplasma 21, 522-60 (1934).

Permeability of the yeast cell membrane. F. Stockhausen and K. Silbereisen. Wochschr. Brau. 53, 281-4 (1936).

The permeability of the cells of bakers' yeast for pyruvic acid under various physiological conditions. J. Runnstrom, E. Sperber and E. Karlsson. Arkiv Kemi Mineral. Geol. 13B, No. 10, 5 pp. (1939)(in German).

Determinations of the permeability of yeast cells to fluorine. M. Malm. Naturwissenschaften 28, 723-4 (1940).

Potassium interchange in yeast cells. G. Hevesy and M. Nielson. Acta Physiol. Scand. 2, 347-54 (1941).

Interchange of the ammonium and potassium ions in muscles and yeast. E. J. Conway, M. F. O'Brien and P. J. Boyle. Nature 148, 662 (1941)

Determination of the permeability of yeast cells to phosphate. M. Malm. Naturwissenschaften 29, 318-19 (1941).

Phosphate separation and permeability of dried bakers' yeast. K. Brandt. Biochem. Z. 312, 89-99 (1942).

The absorption of sugar by yeast cells. W. Musfeld. Ber. schweiz. bot. Ges. 52, 583-620 (1942).

Permeability of yeast cells to radiophosphate. L. J. Mullins. Biol. Bull. 83, 326-33 (1942).

Phosphatases

Acidity optimum of yeast hexosediphosphatase. Z. I. Kertész.
J. Am. Chem. Soc. 52, 4117-9 (1930).

Pyrophosphatases from malt and yeast. H. Luers, B. von Zychlinski
and K. Bengtsson. Wochschr. Brau. 48, 519-22, 529-33 (1931).

Phosphatases. IV. The phosphatases of yeast. H. Albers and E.
Albers. Z. physiol. Chem. 235, 47-61 (1935).

Phosphatase of yeast. C. Hommerberg. Svensk Kem. Tid. 47, 63-74
(1935).

Yeast phosphatases. H. Albers and E. Albers. Arkiv Kemi Mineral.
Geol. 12B, No. 3, 6 pp. (1935).

Phosphatases from yeast. W. Schuchardt. Biochem. Z. 285, 448-56
(1936).

Separation of α -glycerophosphatase and pyrophosphatase from bottom
yeast. E. Bauer. Z. physiol. Chem. 239, 195-206 (1936).

Enzymes of fermentation. I. Yeast phosphatase. A. Schaffner and E.
Bauer. Z. physiol. Chem. 232, 66-76 (1935); II. Yeast phosphatase.
A. Schaffner, E. Bauer and H. Berl. Ibid. 213-28; III. The first
phosphorylation phases of alcoholic fermentation. Ibid. 234, 146-50
(1935); IV. The specificity of yeast phosphatase. E. Bauer, A.
Schaffner and F. Krumey. Ibid. 237, 191-8 (1935); VI. The phosphatases
of yeast. A. Schaffner and F. Krumey. Ibid. 243, 149-65 (1936);
IX. The phosphatases of yeast. Ibid. 255, 145-58 (1938).

The estimation of phosphatase in yeast. J. J. Rae and E. V.
Eastcott. J. Biol. Chem. 136, 443-7 (1940).

Factors in the culture medium that affect the phosphatase content
of yeast. E. V. Eastcott and J. J. Rae. Can. J. Res., 20; sec. B,
202-6 (1942).

Further experiments on the inhibition of "top-yeast phosphatase" by
aneurine. H. G. K. Westenbrink and D. A. van Dorp. Enzymologia
10, 212-15 (1942)(in English).

Determination of Phosphates

Volumetric determinations of phosphoric acid in yeast. G. Staiger. Brenneri Ztg. 41, 209-10 (1924); Chem. Abstr. 20, 2559 (1926).

Methods of analysis of fluid yeast. O. Hummer. Brenneri Ztg. 47, 37-8 (1930).

Determination of phosphorus in yeasts by means of the calorimetric bomb. R. Airolidi. Ann. chim. applicata 25, 523-5 (1935).

Volumetric estimation of phosphoric acid in yeast. J. Kurzweil. Z. Spiritusind. 60, 358 (1937).

Titrimetric determination of phosphoric acid in yeast. J. Kurzweil. Chem. Ztg. 62, 74 (1938).

Volumetric estimation of phosphates in yeast. F. Wagner. Z. Spiritusind. 61, 60, 62 (1938).

Titrimetric determination of phosphoric acid in yeast. F. Wagner. Chem. Ztg. 62, 387 (1938).

Phosphates and Phosphate Complexes

Studies on the phosphorus content of yeast and some yeast preparations. E. Buchner and H. Haehn. Biochem. Z. 27, 418-26 (1910).

Composition of the hexosephosphoric acid formed by yeast. W. J. Young. Biochem. Z. 32, 177-88 (1911).

Enzyme action. VIII. Production of enzyme sols from yeast phosphoproteins. The activity of the sols as a function of the colloidal state. A. Rodor. Fermentforsch. 4, 209-29 (1921).

Phosphoric acid in fermentation. V. Bermann and E. Kulp. Chem. Listy 19, 79-82 (1925); Chem. Abstr. 19, 3142 (1925).

Relations between total change of carbohydrates and their enzymic phosphorylation. H. v. Euler and E. Brunius. Z. physiol. Chem. 160, 242-55 (1926).

The synthesis of the phosphoric acid esters. III. Synthesis of some hexosemonophosphoric acid esters and their behavior toward yeast. R. Nodzu. J. Biochem., Tokyo, 6, 31-47 (1926).

The role of phosphorus in the life of yeast in alcoholic fermentation. E. Elion. Wochschr. Brau. 45, 178-82, 192-5 (1928).

Chemistry and physiology of plant phosphatides. VIII. The phosphatides of yeast. V. Grafe. Biochem. Z. 205, 256-8 (1929).

Water-soluble phosphatide and the Nadi oxidase reaction. M. Gutstein. Biochem. Z. 207, 177-85 (1929).

Action of arsenate on hexosephosphatase. M. G. MacFarlane. Biochem. J. 24, 1051-7 (1930).

The phosphatide of yeast. B. Rewald. Biochem. Z. 218, 481-4 (1930).

Phosphorylation in living yeast. M. G. MacFarlane. Biochem. J. 30, 1369-79 (1930).

Transformation of the synthetic glyceric acid monophosphate into pyruvic acid by yeast and lactic acid bacteria. C. Neuberg and M. Kobel. Biochem. Z. 260, 241-6 (1933).

Behavior of glyceric acid monophosphate in the presence of yeast. II. C. Neuberg and M. Kobel. Biochem. Z. 263, 219-27 (1933).

The special conditions of phosphorylation of maltose by fresh yeast, dry yeast and maceration juice. T. Baba. Biochem. Z. 273, 207-18 (1934).

The occurrence of adenosinetriphosphoric acid in living yeast. H. v. Euler, E. Adler and M. Petursson. Svensk Kem. Tid. 47, 249-51 (1935)(in German).

Transformation of the pyrophosphate fraction in yeast cells. M. M. Levitov. Biochem. Z. 284, 86-98 (1936).

Isolation of adenosinetriphosphoric acid from yeast. T. Wagner. Jauregg. Z. physiol. Chem. 238, 129-30 (1936).

Adenosinetriphosphoric acid in bottom yeast. N. Das. Svensk Kem. Tid. 48, 22-4 (1936).

Pyrophosphate of yeast cells. I. Behavior of the pyrophosphate toward enzymes. M. M. Levitov. Bull. biol. méd. exptl. U.R.S.S. 1, 106-8 (1936).

Enzymic synthesis of adenosine-5-monophosphoric acid (muscle adenylic acid) from adenosine. P. Ostern and J. Terszakowec. Z. physiol. Chem. 250, 155-7 (1937).

Phosphorus exchange in yeast. G. Hevesy; K. Linderström-Lang and N. Nielsen. Nature 140, 725 (1937).

Polyphosphoric acid compounds in yeast cells and in skeletal muscle. B. Umschweif and K. Gebaylo. Acta Biol. Exptl., Warsaw, 11, 124-6 (1937).

Phosphoglyceric acid formation by living yeast. S. Rapoport. Enzymologia 3, 52-5 (1937)(in German).

Phosphoric acid esters from yeast extract. The isolation of a crystalline calcium salt consisting of an equimolecular mixture of glucosemonophosphate and glycerophosphate. C. V. Smythe. J. Biol. Chem. 117, 135-46 (1937).

A new inorganic phosphoric constituent discovered in yeast, and the constitution of the adenosinepolyphosphoric acids. K. Gibaylo and B. Umschweif. Compt. rend. soc. biol. 125, 275-7 (1937).

Biological synthesis of yeast cell-substance. VIII. Phosphate minimum in yeast cultures. H. Fink. Biochem. Z. 310, 311-12 (1942).

The phosphate content of compressed yeast in the aerobic metabolism of glucose and in the initiation of growth. K. M. Brandt. Naturwissenschaften 30, 278 (1942).

Physiology

The physiological condition of yeast. H. Lange. Wochschr. Brau. 24, 417 (1907).

Action of the electric current upon expressed yeast juice. E. Rosenscheck. Biochem. Z. 9, 255-63 (1908).

Researches on the physiology and morphology of yeasts. (XIII). E. C. Hansen. Compt. rend. trav. lab. Carlsberg 7, 179-217 (1908).

Toxic substance elaborated by yeast. A. Fernbach. Ann. brasserie dist. 12, 361-3 (1909).

Yeast poison in yeast. F. Hayduck. Wochschr. Brau. 26, 677 (1909).

Theories of cell growth in the light of feeding experiments with yeast. M. Rubner. Sitzber. preuss. Akad. Wiss. 1909, 164-79 (1909)

Changing the characteristics of top-fermenting brewery yeasts. F. Schönfeld, Hinrichs, and H. Kossmann. Wochschr. Brau. 27, 493-8, 515-8, 532-6, 541-2, 553-6 (1910).

Decomposition of nitrogenous substances by yeast. O. Schwarz. Biochem. Z. 33, 30-1 (1911).

A structure in the cell membrane of various yeasts. H. Zikes. Centr. Bakt. Parasitenk., Abt. II, 30, 625-39 (1911).

The influence on the extent of multiplication of variation in the amount of yeast added to the wort. F. Hayduck and G. Anders. Wochschr. Brau. 28, 233-6 (1911).

Morphological and physiological examination of the interior of yeast cells. W. Henneberg. Wochschr. Brau. 29, 321-5, 344-9 (1912).

The fixation of elementary nitrogen by Saccharomyces (yeasts) Monilia candida, and Oidium lactis. A. Kossowicz. Z. Garungsphysiol. 1, 253-5 (1912).

Results of recent experiments on assimilation by yeasts and molds. P. Lindner. Z. angew. Chem. 25, 1175-6 (1912).

Contribution to the knowledge of yeasts without spore formation which occur in the brewing industry and their surroundings. V. H. Will and J. Scheckenbach. Centr. Bakt. Parasitenk., Abt. II, 34, 1-35 (1912).

Influence of previous nourishment upon spore formation of yeast. S. Zetlin. Ber. bact. agron. Sta. Moskau 20, 142-242 (242-3 in Ger.) (1913); Biedermanns Zentr. 43, 499-501 (1914).

The physiology of nutrition of the yeast cell during alcoholic fermentation. M. Rubner. Arch. Anat. Physiol., physiol., suppl. 1912, 1-396 (1912?); Leipzig: Verlag von Veit & Co. 396 pp (1913).

Assimilation of nourishment by the yeast cell. M. Rubner. Sitzber. preuss. Akad. Wiss. 1913, 232-41 (1913).

Studies on yeast. I. The relation of cell-reproduction to the supply of free oxygen. H. T. Brown. Ann. Bot. 28, 197-226 (1914).

Differentiation of various kinds of yeast by the aid of specific agglutinins. S. Lichtenstein. Arch. Anat. Physiol., physiol., 1914, 525-32 (1914?).

Yeast and attenuation. M. H. Daly. Brewers' J., London, 51, 508- (1915).

The agglutinating substance in yeast cells. S. Lichtenstein. Arch. Anat. Physiol., physiol., 1915, 189-92 (1915?).

Chemical conditions for the development of the reproductive organs of some yeasts. K. Saito. J. Coll. Sci. Imp. Univ. Tokyo 39, 1-70 (1916).

Chemical phenomena in the symbiosis of yeasts. A. J. J. Vanderveelde. Rev. gén. chim. 19, 96-109 (1916).

On the reciprocal action of two different yeasts. H. v. Euler. Biochem. Z. 75, 339-45 (1916).

The nutritional physiology of alcohol and acids in yeasts and other widely distributed fungi. Th. Bokorny. Allg. Brauer-Hopfen-Ztg. 57, 747-9 (1917); Chem. Abstr. 13, 358 (1919).

Data relating to the reproduction of yeast. Th. Bokorny. Wochschr. Brau. 34, 269-71 (1917); J. Inst. Brewing 24, 38-9 (1918).

Adaptability of yeast to different temperatures. H. Zikes. Allg. Z. Bierbrau. Malzfabr. 46, 359 (1918).

Acid formation in molds and yeasts. F. Boas and H. Leberle. Biochem. Z. 90, 78-95 (1918).

Acid formation by fungi and yeasts. F. Boas and H. Leberle.
Biochem. Z. 92, 170-87 (1918).

Use of enzymes in the study of cellular physiology; the yeast cell deprived of its enveloping membrane. J. Giaja. Compt. rend. soc. biol. 82, 719-20 (1919).

The dependence of yeast growth and yeast fermentation on physico-chemical conditions. F. Boas. Biochem. Z. 105, 193-8 (1920).

The comparative physiology of digestion. VIII. Relation of yeast cells to proteases. H. Walter. Pflüger's Arch. ges. Physiol. 181, 271-84 (1920).

Probable cause of the lack of harmony in the results of assimilation experiments with different yeasts and with different sugars. P. Lindner. Wochschr. Brau. 37, 19-21 (1920).

Influence of temperature on various functions of yeast. H. Zikes. Centr. Bakt. Parasitenk. 49, Abt. II, 353-73 (1919); Ibid. 50, 385-410 (1920).

Physiology of yeast. E. Kohler. Biochem. Z. 111, 17-29 (1920).

Internal condition of yeast cells and its recognition in the case of bakers' yeast. W. Henneberg. Z. ges. Getreidew. 13, 73-9 (1921).

Shape of well drained and pressed yeast cells. E. R. Moritz. J. Inst. Brewing 27, 572 (1921).

Chemico-physiological studies of the yeast cell. K. Schweizer. Bull. assoc. chim. sucr. dist. 38, 304-15 (1921).

The cultivation of yeast in solutions of purified nutrients. M. B. MacDonald and E. V. McCollum. J. Biol. Chem. 45, 307-11 (1921).

Reducing action of microorganisms on ammonium molybdate. V. E. Levine and H. M. Jahr. Abstr. Bact. 5, 4-5 (1921).

Influence of hydrogen ion concentration on the development of yeast and bacteria and on the stability of beer. M. H. van Laer. Petit J. Brasseur 1922, Nos. 1193, 1194 (1922); Chem. Abstr. 17, 1687 (1923).

Yeast deprived of membrane. J. Giaja. Compt. rend. soc. biol. 86, 708-9 (1922).

Effect of a yeast extract on the oxygen consumption of washed frog muscle. H. F. Holden. Biochem. J. 17, 361-3 (1923).

The influence of temperature increase on the surface tension of different bacteria. M. Tinti. Z. Immunitätsforsch. 36, 337-46 (1923).

Production of hydrogen sulfide by yeast. C. B. Morison. Science (n.s.) 60, 482-3 (1924).

The sedimentation of yeast suspensions. L. Berczeller and H. Wastl. Biochem. Z. 144, 159-69 (1924).

Studies on the Arndt-Schulz law. A. Hardt. Z. Immunitätsforsch. 38, 544-52 (1924).

Yeast protein as an antigen. H. Evers and F. Ottensooser. Biochem. Z. 148, 130-46 (1924).

Mechanism of antiketogenic action. I. Weiss and M. Altai. Magyar Orvosi Archivum 26, 485-96 (1925); Chem. Abstr. 20, 936 (1926).

Nitrogen equilibrium in yeast cells. Preliminary Communication. H. v. Euler and V. Sandberg. Z. physiol. Chem. 146, 290-9 (1925).

Radioactivity, fixators of nitrogen and alcoholic yeasts. E. Kayser and H. Delaval. Compt. rend. 181, 151-3 (1925).

The adsorption of phospho-proteins by yeast of different adsorbents and the "Elution" of the adsorbed materials. A. Fodor and R. Schonfeld. Kolloid. Z. 37, 37-40 (1925).

Bacterial and yeast antagonism. III. I. Schiller. Centr. Bakt. Parasitenk., Abt. I, 94, 64-6 (1925).

The effect of stimuli on single cells. R. Meyer. Biochem. Z. 174, 384-91 (1926).

Influence of the composition of the medium on the osmotic value of the yeast cell. G. Seliber and R. Katznelson. Compt. rend. soc. biol. 97, 449-50 (1927).

Determination of the osmotic value of the yeast cell by changing the weight of the cell. G. Seliber and R. Katznelson. Compt. rend. soc. biol. 97, 347-9 (1927).

Sporulation of yeast. H. Stantial, Univ. of Toronto. Trans. Roy. Soc. Can. (3) 22, III, 257-61 (1928).

The exchange of ions between yeast cells and solutions of ammonium chloride. P. Genaud. Compt. rend. 188, 1513-4 (1929).

Generation and regeneration of warm-stored bottom- and top-fermentation yeasts. F. Windisch. Wochschr. Brau. 46, 71-4, 81-6 (1929).

Ionic exchange between yeast cells and lead nitrate solutions. P. Genaud. Compt. rend. 189, 591-2 (1929).

Researches in ionic interchange between yeast cells and salt solutions. P. Genaud. Ann. physiol. physicochim. biol. 6, 240-330 (1930); Rev. gén. colloides 8, 241-50 (1930).

The order of death of organisms larger than bacteria. O. Rahn. J. Gen. Physiol. 14, 315-37 (1931).

Lethal effect of alternating current on yeast cells. R. L. Tracy, Jr. J. Bact. 24, 423-38 (1932).

The peculiarities of the electric charges of yeast cells. E. A. Moldavskaya. Biochem. Z. 257, 480-3 (1933).

An experimental comparison of different criteria of death in yeast. O. Rahn and M. N. Barnes. J. Gen. Physiol. 16, 579-92 (1933).

New investigations on "harmony." J. Straub. Chem. Weekblad 30, 790-2 (1933).

Endocellular hydrogen donors of yeast and their variation with the age of the culture. F. Chodat and M. Junquerz. Compt. rend. soc. phys. hist. nat. Genève 50, 199-203 (1933).

The growth of yeast and the theoretical and practical yields from sugar solutions. H. Claassen. Z. Ver. deut. Zucker Ind. 84, 713-42 (1934).

Acclimatization of yeasts. P. Petit. Brasserie et malterie 24, 195-7 (1934); Chem. Abstr. 29, 882 (1935).

Chemistry of death. O. Rahn. Cold Spring Harbor Symposia 2, 70-7 (1934).

Behavior of the combination of glycine-alcohol toward yeast shaken with oxygen. F. Lieben and S. Molnar. *Biochem. Z.* 277, 165-70 (1935).

The mutual relation of the processes yielding energy in the living cell. V. A. Belitzer. *Ark. Biol. Nauk* 38, 665-73 (674 in English) (1935).

Phenomena of the elaboration of the cellular matter of yeast and theoretical and maximum practical yields of yeast from sugar solutions. H. Claassen. *Ann. zymol.* (2) 2, 164-93 (1935).

Acclimatization of yeast to high-temperature, high-alcohol complexes. H. S. Chaturvedi. *J. Sci. Tech., Cawnpore*, 1, 1-19 (1935); *Chem. Abstr.* 29, 5593 (1935).

Sporulation of yeast. II. H. Stantial. *Trans. Roy. Soc. Can.* (3) 29, III, 175-88 (1935).

Certain plant membranes. Y. Khouvine. *Compt. rend.* 200, 982-3 (1935).

Generation period of yeast in relation to the culture medium. J. Fuchs. *Wochschr. Brau.* 53, 17-19 (1936).

Increase of diamagnetic susceptibility on the death of living cells. E. Bauer and A. Raskin. *Nature* 138, 801 (1936).

Thermo- and photochemical phenomena on the death of cells. III. Vitamins in metabolism. W. W. Lepeschkin. *Protoplasma* 28, 529-42 (1937).

Active states of yeast plasma. I. J. Hanak and L. Schwarg. *Protoplasma* 28, 290-2 (1937).

Heat liberated during death after depletion of the vita-proteids in starved yeast and after their synthesis in well-fed yeast. W. W. Lepeschkin. *Biodynamica* No. 27, 7 pp. (1937).

Yeast as a means for the stabilization of ascorbic acid. M. M. Eidel'man. *Voprosy Pitaniya* 6, No. 5, 55-63 (63 in English) (1937); *Chem. Abstr.* 32, 6699 (1938).

Induced autotrophism in yeast. L. H. Leonian and V. G. Lilly. *J. Bact.* 45, 329-39 (1943).

Antioxidant activity in sources of the B vitamins. P. Gyorgy and R. Tomarelli. *J. Biol. Chem.* 147, 515-24 (1943).

Pigmented Yeasts

Red yeasts. K. Ando. Orig. Commun. 8th Intern. Congr. Appl. Chem. (N. Y. 1912) 14, 7-12 (1912); Chem. Abstr. 6, 3103 (1912).

Black yeasts. H. Will and F. Noldin. Z. ges. Brauw. (n.s.) 37, 13-6 (1914).

Chromogenic yeasts--a new biologic reaction for iron. M. W. Beijerinck. Arch. neerland. physiol. 2, 609-15 (1918).

"Black yeasts" (Zymonemata nigra and a variable Torula). E. Pribram. Ergeb. Physiol. 24, 95-106 (1925).

Identification of "black yeast." G. K. Bovgwitz. Wochschr. Brau. 45, 213 (1928).

Coloring matter in red yeast. H. Fink and E. Zenger. Wochschr. Brau. 51, 89-93 (1934).

Biochemistry of the pigment in red yeast. H. Fink and E. Zenger. Wochschr. Brau. 51, 129-30 (1934).

Red yeast. Sporobolomyces nov. sp. II. Provitamin A content. I. Yamasaki and S. Morisita. J. Agr. Chem. Soc. Japan 17, 593-8 (1941); Bull. Agr. Chem. Soc. Japan 17, 76-7 (in English)(1941).

Action on Plants

The effects of yeast vitamin water-soluble B on plant cell masses and on biocolloids. D. T. MacDougall. Proc. Soc. Exptl. Biol. Med. 18, 85-7 (1920).

The formation of plant growth-promoting substances by microorganisms. F. A. Mockeridge. Ann. Bot. 38, 723-34 (1924).

The growth-principle of yeast. W. Weichardt. Deut. med. Wochschr. 53, 1545-7 (1927).

The growth substances of yeast. N. Nielsen. Biochem. Z. 237, 244-6 (1931).

Further studies on respiration in peas and cereal seeds. IX. The role of boiled yeast juice. Oxidized carotene as a hydrogen acceptor. A. Fodor and L. Frankenthal. Biochem. Z. 246, 414-30 (1932).

Folliculin and plants. Experiments on hyacinths and yeast. H. v. Euler and B. Zondek. *Biochem. Z.* 271, 64-73 (1934).

The effect of yeast extract on the blooming of plants. A. T. Virtanen and S. v. Hausen. *Acta Chem. Fennica* 7B, 75 (1934)(in English).

Investigations on the role of organic matter in plant nutrition.

V. Influence of minute quantities of certain forms of organic matter on the growth of barley. G. S. Siddappa and V. Subrahmanyam. *Proc. Indian Acad. Sci.* 113, 229-239 (1934). VI. Effect of injecting minute quantities of certain forms of organic matter on plant growth and reproductions. *Ibid.* 381-404 (1934).

Separation from yeast of materials essential for growth of excised tomato roots. P. R. White. *Plant Physiol.* 12, 777-90 (1937).

Awakening resting winter buds with crude solutions of growth substance from fungi. A. Niethammer. *Gartenbauwiss.* 14, 651-3 (1940).

Preparation from yeast that is active in breaking the rest period of buds. J. D. Guthrie. *Contrib. Boyce Thompson Inst.* 12, 195-201 (1941).

Formation of auxin in yeast cultures. T. W. Robinson and T. J. B. Stier. *J. Gen. Physiol.* 24, 765-9 (1941).

Effect of vitamins in yeast extract on the growth of tomatoes. M. A. H. Tincker. *J. Roy. Hort. Soc.* 67, 271-3 (1942).

Feeding of Poultry

Some experiments relative to the weight and quality of the meat of geese in feeding experiments with potato flakes and yeast compared with potato flakes and meat flour. W. Voltz and A. Baudrexel. *Wochschr. Brau.* 30, 165-8 (1913).

Rearing of chickens on the intensive system. III. B-vitamin requirements. Comparison of yeast extract and dried yeast. R. H. A. Plimmer and J. L. Rosdale. *Biochem. J.* 17, 772-786 (1923).

Anti-sterility vitamin E and poultry. R. T. Parkhurst. *Science* (n.s.) 66, 67-8 (1927).

The effect of yeast feeding on some blood constituents of hens.
A. A. Horvath. Am. J. Physiol. 87, 208-20 (1928).

The occurrence in chicks of a paralysis of nutritive origin. L. C. Norris, G. F. Heuser, H. S. Wilgus, Jr. and A. T. Ringrose.
Poultry Sci. 10, 93-7 (1931).

A type of nutritional leg paralysis affecting chicks. R. M. Bethke, P. R. Record and D. C. Kennard. Poultry Sci. 10, 355-68 (1931).

A study of the heat stability of the vitamin B factors required by the chick. C. A. Elvehjem, O. L. Kline, J. A. Keenan and E. B. Hart.
J. Biol. Chem. 99, 309-19 (1932).

Effect of beer yeast on avitaminosis B in Rhode Island red hens.
G. Nichita and N. Tuschak. Compt. rend. soc. biol. 117, 286-8 (1934).

Comparative vitamin D requirements of the chick for sardine (pilchard), concentrated, and cod-liver oils, irradiated yeast, irradiated ergosterol and irradiated cholesterol. L. L. Lachot and H. A. Halvorsen.
J. Assoc. Official Agr. Chem. 19, 637-46 (1936).

Vitamin G requirement of poultry. L. C. Norris, H. S. Wilgus, Jr., A. T. Ringrose, Vi. Heiman and G. F. Heuser. Bull. Cornell Univ. Agr. Expt. Sta. 660, 20 pp. (1936).

A new dietary water-soluble factor required by chicks. E. L. R. Stokstad and P. D. V. Manning. Science (n.s.) 88, 35-6 (1938).

Brewers' yeast as a food and source of vitamins, especially for poultry. O. Rygh. Svenska Bryggareforen. Månadsbl. 53, 533-9 (1938); Chem. Abstr. 35, 4911 (1941).

The growth-promoting qualities of various protein concentrates for Leghorn chickens. J. J. Bronkhorst. Onderstepoort J. Vet. Sci. 10, 481-501 (1938).

Comparative nutritive values of extracted and nonextracted dried yeasts. J. Marcq, L. Lepoutre and A. Devuyt. Bull. inst. agron. sta. rech. Gembloux 8, 5-23 (1939).

Maintenance of nutrition in the pigeon. Further evidence for the presence of dietary essentials in yeast and liver and their relation to vitamin B₆. C. W. Carter and J. R. O'Brien. Biochem. J. 33, 1810-15 (1939).

Biotin and prevention of dermatitis in turkey poults. H. Patrick, R. V. Boucher, R. A. Dutcher and H. C. Knandel. Proc. Soc. Exptl. Biol. Med. 48, 456-8 (1940).

Effect of yeast extract and other supplements on the growth of chicks fed simplified diets. T. H. Jukes. J. Biol. Chem. 133, 631-2 (1940).

Further observations on choline and yeast in chick nutrition. P. R. Record and R. M. Bethke. Poultry Sci. 21, 271-6 (1942).

Preservation

Preserving action of phosphoric acid on yeast. E. Moufang. Wochschr. Brau. 26, 642-3 (1909).

Top fermenting yeast and acidity. P. Petit. Wochschr. Brau. 28, 395-7 (1911).

Ten-year experiment on the longevity of wine yeasts in pure cultures on 10 percent cane sugar solution. R. Meissner. Z. Gärungsphysiol. 1, 106-13 (1912).

Preserving compressed yeast. Anon. Pharm. Zentralh. 57, 761 (1916).

Preparation of permanent yeast. Th. Bokorney. Allg. Brauer-Hopfen-Ztg. 55, 1547-50 (1916); Chem. Abstr. 12, 403 (1918).

Preservation of moist yeast. W. Voltz. J. Inst. Brewing. 24, 190 (1918).

Influence of temperature and duration of storage on the fermentative power, cell increase and acid production of top fermentation yeasts. F. Windisch. Wochschr. Brau. 46, 31-2 (1929).

Influence of salted yeast on the growth of young rats. L. Rosenow and M. Rosenow. Biochem. Z. 228, 163-4 (1930).

A successful method of yeast preservation. R. Bertel. Atti Congr. intern. panificazione (Rome 1932) 1, 399-401 (1933).

The preservation of yeasts. J. Raux, Brasseur franç. 2, 458-9 (1938); Chem. Abstr. 33, 309 (1939).

The lyophil process--its use in the preservation of yeasts. L. J. Wickerham and A. A. Andreasen, Wallerstein Labs. Commun. 5, 165-9 (1942).

Pressuremeter Studies.

A short gassing power method. R. M. Sandstedt. Cereal Chem. 15, 114-16 (1938).

Evaluation of yeast activity by means of the Sandstedt-Blish pressuremeter. R. T. Bohn and H. H. Favor. Cereal Chem. 16, 238-52 (1939).

The pressuremeter in the study of yeast. J. M. Doty and W. R. Urban. Cereal Chem. 17, 44-54 (1940).

Production, General

The wholesale preparation of albuminoids from inorganic matter by microorganisms. H. C. Prinsen-Geerligs. La. Planter Sugar Mfr. 56, 220-1 (1916).

Amino nitrogen and the manufacture of yeasts. C. Schweizer. Bull. assoc. chim. suc. dist. 35, Nos. 7-9, 52-6 (1918).

The multiplying power of yeast at different degrees of acidity. O. Svanberg. Z. tech. Biol. 8, 1-22 (1920).

The preparation, based on chemical determinations, of a nutrient solution for the production of yeast. F. Wendel. Z. Spiritusind. 45, 160, 166-7, 171-2 (1922).

The rate of formation and the yield of yeast in wort. N. A. Clark. J. Phys. Chem. 26, 42-60 (1922).

The possibility of using fruit sugar for the manufacture of compressed yeast with particular reference to the utilization of carob sugar. G. Mezzadrolì and S. Schlavi. Atti Congr. naz. chim. pura applicata (Palermo 1926) 2, 1015-8 (1926).

A substitute for beerwort as a yeast medium in the bacteriology laboratory. J. C. Weldin. Proc. Iowa Acad. Sci. 34, 89-90 (1927).

Latest progress in the production of yeast without production of alcohol. A. Mertens. Bull. trimestr. assoc. élèves école sup. brasserie univ. Louvain 27, 133-9 (1927); Chem. Abstr. 21, 3213 (1927).

Yeast production in worts of varying original gravities. R. H. Hopkins. J. Inst. Brewing 33, 337-46 (1927).

Manufacture of yeast and its products. A. L. Davidson. Can. Chem. Met. 11, 90-2 (1927).

The regeneration of fat residues in yeast production. M. A. Bendetzkii. Nauch. Zapiski Sakhar. Prom. (in Russian) 5, 26-7 (1927).

Studies on yeast fermentation under high gas pressure. R. Lieske and E. Hofmann. Biochem. Z. 210, 448-57 (1929).

Dependence of yeast multiplication on the kind and construction of the fermenting tank. E. Lühder and W. Kilp. Brennerei Ztg. 46, 198-9 (1929); Chem. Abstr. 24, 2542 (1930).

Production of dry pitching yeast of high fermentative power. F. Windisch. Wochschr. Brau. 46, 288-91 (1929).

The course of fermentation in the vat. F. Windisch. Wochschr. Brau. 46, 379-88 (1929).

Dependability of yeast multiplication upon the kind of fermenting vat. E. Lühder and W. Kilp. Landw. Jahrb. 70, 553-64 (1929).

The economy of spirit and yeast manufacture. E. G. Stich. Chem. Ztg. 54, 217-20, 238 (1930).

Effect of high pressures of carbon dioxide on yeast fermentation. F. Windisch. Wochschr. Brau. 47, 82-3 (1930).

Most economical conditions of fermentation in yeast factories. W. Heller. Przemysl Chem. 18, 141-3 (1934); Chem. Abstr. 29, 7010 (1935).

The production of pure yeast. B. M. Brown. J. Inst. Brewing 40, 9-16 (1934).

Yeasts. J. Raux. Brasserie et malterie 26, 154-9, 169-75 (1936); Chem. Abstr. 31, 1154 (1937).

Scientific and industrial employment of yeast. C. L. Lautenschläger. Med. u. Chem. Abh. med. chem. Forsch. I. G. Farbenind. 3, 116-42 (1936) Chem. Abstr. 31, 5833 (1937).

Experiments in cultivating bakers' yeast according to different procedures. W. Broun and R. Pfund. Biochem. Z. 287, 115-25 (1936).

Froth control in yeast production. B. D. Metyuskev and S. E. Kharin. Chem. Abstr. 32, 9388 (1938).

The relation between the manufacturing conditions in a yeast plant and the chemical composition of extracts of the yeast cells. V. Stuchlik. Chem. Listy 32, 415-23 (1938); Chem. Abstr. 33, 3063 (1938).

The relation between the development of yeasts and the hydrogen ion concentration of the nutrient solution. H. Turu. Fuknoka Ikwadaigaku Zasshi 33, 971-92 (in Japanese)(78-9 in Gorman. (1940).

The growing of food yeast. Introduction. A. G. van Veen. Arch. Suikerind. Nederl. Nederl.-Ind. 2, 484-5 (1942); J. K. Baars and J. F. Bogtstra. Ibid. 486-94.

Preparation of a yeast with the use of hops, wheat and sugar. A. Schulz. Z. ges. Getreidew. 29, 130-2 (1942).

Yeasts and the yeast industry. J. A. Marcella. Surco, Madrid, 2, No. 20, 11-14 (1943).

Value of Protein

The importance of yeast as foodstuff and medicine. W. Mooser, Schweiz. Apoth. Ztg. 52, 609-11, 625-8 (1914); Mitt. Lebensm. Hyg. 5, 295-301 (1914).

The nutritive value of yeast, polished rice and white bread, as determined by experiments on man. C. Funk, W. G. Lyle and D. McCaskey. J. Biol. Chem. 27, 173-91 (1916).

The nutritive value of yeast protein. T. B. Osborne and L. B. Mendel. J. Biol. Chem. 38, 223-7 (1919).

Bakers' yeast as food for man. P. B. Hawk, C. A. Smith and R. D. Holder. Am. J. Physiol. 48, 199-210 (1919).

The biological value of proteins at different levels of intake. H.H. Mitchell. J. Biol. Chem. 58, 905-22 (1924).

Comparative nutritive value of the different proteins of Japanese foodstuffs. O. Suzuki, Y. Matsuyama and N. Hashimoto. Bull. soc. sci. hyg. aliment. 15, 540-7 (1927).

The biological value of yeast proteins for the rat. E. V. Still and F. C. Koch. *Am. J. Physiol.* 87, 225-48 (1928).

Nutritive value of yeast as a supplementary substance in the diet of infants. I. K. Itami. *Okayama-Igakkai-Zasshi* 47, 2072-96 (1935); *Chem. Abstr.* 29, 8075 (1935).

The use of yeast as a human foodstuff. I. The vitally important amino acids of yeast. H. Kraut and F. Schlottmann. *Biochem. Z.* 291, 406-14 (1937).

Egg-replacement value of several proteins in human nutrition. E. E. Summer, H. B. Pierce and J. R. Murlin. *J. Nutrition* 16, 37-56 (1938).

The content of purine bases in yeast during their growth in different media. B. Kagan and M. Stadnichenko. *J. Microbiol., Kiev*, No. 2, 93-102 (1938).

The biological quality of yeast protein. A. Hock. *Wochschr. Brau.* 58, 269-70 (1941).

The metabolic action of small supplements of dried casein, yeast powder, sweet-pea or soybean meal on the protein nutrition of Germans during the first war year (1939-1940). A. Bickel. *Deut. med. Wochschr.* 67, 569-74 (1941).

The adequacy of cultured yeasts for human nutrition. II. The biological utilization of dry yeasts grown on wood carbohydrates (Bergin). K. Dirr. *Biochem. Z.* 312, 233-51 (1942); *Ibid.* 309, 329 (1941); III. Digestibility in vitro of different yeasts, as compared with other proteins used in human nutrition. O. von Soden and K. Dirr. *Ibid.* 252-62; IV. The lipids of cultured yeasts. *Ibid.* 263-76.

The nutritional value of yeast proteins. A. Bickel. *Biochem. Z.* 310, 355-77 (1942).

Biological completeness of various edible proteins. I. Replacement of animal protein by yeast protein. A. Hock. *Biochem. Z.* 311, 385-401 (1942).

Methionine deficiency in yeast protein. A. A. Klose and H. L. Fevold. *Proc. Soc. Exptl. Biol. Med.* 56, 98-101 (1944).

The nutritive value of yeast proteins. H. E. Carter and G. E. Phillips. *Fed. Proc. Fed. Am. Soos. Exptl. Biol.* 3, 123-128 (1944).

Proteolytic Enzymes

Influence of temperature on the action of proteolytic enzymes and the zymase in killed yeast cells. A. Petruschewsky. Z. physiol. Chem. 50, 251-62 (1907).

The asparagine-splitting enzyme of yeast. K. Kuroko. J. Coll. Agr. Imp. Univ. Tokyo 1, 295-300 (1911).

The action of phosphates on the work of the proteolytic enzyme in yeast. N. Ivanov. Z. Garungsphysiol. 1, 230-52 (1912).

Proteolysis of yeast. A. J. J. Vandewelde. Bull. soc. chim. Belg. 26, 107-112 (1912).

Peptic strength of yeast. Th. Bokorny. Allg. Brauer-Hopfen-Ztg. 54, 2533-4 (1914); Chem. Abstr. 9, 349 (1915).

Enzyme action. I. Enzyme degradation of polypeptides. E. Abderhalden and A. Fodor. Fermentforsch. 1, 533-96 (1916); J. Chem. Soc. 112, I, 306-9 (1917).

Comparative study of the proteolytic enzymes; erepsin from the intestine and ereptase from yeast. K. G. Dernby. Medd. Vetenskapsakad. Nobel Inst. 3, No. 14, 1-30 (1916).

The proteoclastic enzymes of yeast and their relationship to autolysis. K. G. Dernby. Biochem. Z. 81, 109-208 (1917).

The nature of peptide-splitting enzymes from the maceration of yeast. A. Fodor, L. Bernfeld and R. Schonfeld. Kolloid. Z. 37, 32-7 (1925).

A study of proteases of bread yeast. A. G. Olsen and C. H. Bailey. Cereal Chem. 2, 68-86 (1925).

Peptidases. V. Specificity of yeast and intestinal peptidases. H. v. Euler and K. Josephson. Ber. 60B, 1341-9 (1927).

The effect of proteolytic enzymes on the benzoyl and phthalyl derivatives of polypeptides. I. The action of intestinal erepsin and of yeast protease on phthalylglycylglycine and phthalyl diglycylglycine. S. Utzino. J. Biochem., Tokyo, 9, 453-63 (1928).

Plant proteases. VI. The proteases of yeast. R. Willstätter and W. Grassmann. Z. physiol. Chem. 153, 250-82 (1926); VIII. Adsorption behavior and separation of the yeast proteases. W. Grassmann and W. Haag. Ibid. 167, 188-201 (1927); IX. The dipeptidase and the polypeptidase of yeast. W. Grassmann. Ibid. 202-20; X. The mode of action of yeast polypeptidase. W. Grassmann and H. Dyckerhoff. Ibid. 175, 18-37 (1928); XIII. The proteinase and the polypeptidase of yeast. Ibid. 179, 41-78 (1928); XVI. The activation of animal and plant proteases by glutathione. W. Grassmann, O. v. Schoenebeck and H. Eibeler. Ibid. 194, 124-36 (1931); XVII. Aminopolypeptidase from yeast. W. Grassmann, L. Embden and H. Schneller. Biochem. Z. 271, 216-28 (1934).

Report on plant proteases in the series of experiments begun by R. Willstätter and his collaborators. XI. On the specificity of yeast peptidase. W. Grassmann and H. Dyckerhoff. Ber. 61B, 656-70 (1928).

Proteolytic action of yeasts. F. Zaribnicky. Mikrochemie Festschr. H. Pregl 338-40 (1929).

Hydrolysis of proline polypeptides by yeast and pancreas extracts, also by pancreatin preparations. A. Fodor, M. Frankel and S. Kuk. Biochem. Z. 229, 28-40 (1930).

Separation of yeast proteases. W. Grassmann. Handb. biochem. Arb. Methoden, Abt. 4, Tl. 1, 799-826 (1930).

Autolytic action of animal tissue proteinases and the influence of heavy metals on them. K. G. Stern. Biochem. Z. 234, 116-38 (1931),

The proteolytic enzymes of yeast. T. F. Macrae. Biochem. J. 27, 1229-36 (1933).

The peptic power of the proteolytic enzymes of malt, lactic cultures, yeast and hops. L. Idoux. Brasserie et malterie 23, 166-9 (1933); Chem. Abstr. 27, 5469 (1933).

Specificity of dipeptidase and aminopolypeptidase. W. Grassmann and H. Bayerle. Biochem. Z. 268, 214-19 (1934).

Influence of temperature on the activation and inactivation of yeast proteinases in relation to environmental conditions. A. V. Blagoveshchenskiĭ and G. D. Vovchenko. Biochem. Z. 276, 289-96 (1935).

Some energy indexes for the activation of yeast protease. G. D. Vovchenko. Arkh. Biol. Nauk 39, 183-90 (190 in German)(1935).

Studies in enzyme action. I. The estimation of pepsin and trypsin in yeast. M. Hecht and H. Civin. J. Biol. Chem. 116, 477-88 (1936).

The effect of oxidants on yeast proteinase. A. V. Blagoveshchenskiĭ and T. A. Sorokina. Bull. biol. méd. exptl. U.S.S.R. 4, 176-9 (1937) (in English).

Aspartase action of yeast. H. Haehn and H. Leopold. Biochem. Z. 292, 380-7 (1937).

Deaminizing enzyme of yeast (aspartase). H. Leopold. Landw. Jahrb. 85, 534-65 (1938).

A new enzymic protein of yeast and a reversible enzymic synthesis of glycogen. W. Kiessling. Naturwissenschaften 27, 129-30 (1939).

Extraction of proteolytic enzymes from yeast. H. H. Strain. Enzymologia 7, 133-41 (1939)(in English).

A chemically pure yeast peptidase. M. J. Johnson. Intern. Congr. Microbiol. Rept. Proc. (N. Y. 1939) 3, 209-11 (1940).

Extraction of proteins and proteolytic enzymes from yeast. H. H. Strain. Compt. rend. trav. lab. Carlsberg, chim. 23, 149-62 (1940).

Yeast dipeptidases. E. Maschmann. Naturwissenschaften 31, 136-7 (1943).

Pyruvic Acid

Pyruvic acid produced by living yeast. A. Fernbach and M. Schoen. Compt. rend. 157, 1478-80 (1913); Ibid. 158, 1719-22 (1914).

Assimilation of lactic acid by yeasts and production of pyruvic acid by yeasts and oidia. P. Mazé and M. Ruot. Compt. rend. soc. biol. 80, 336-9 (1917).

Production of pyruvic acid from sugar by microorganisms. S. Kato. J. Sci. Agr. Soc., Tokyo, 1923, No. 251 (1923); Chem. Abstr. 18, 1684 (1924).

The action of pyruvic acid and acetaldehyde toward yeast aerated with oxygen. F. Lieben. Biochem. Z. 135, 240-7 (1923).

Biochemical transformation of oximino-pyruvic acid into alanine. K. Maurer. Biochem. Z. 189, 216-9 (1927).

Yeast fermentations considered from the biological standpoint. III. The fermentation of pyruvic acid. H. Haehn and M. Glaubitz. Z. physiol. Chem. 168, 233-43 (1927).

Alcohol fermentation. XVII. Pyruvic acid as an intermediary product of alcoholic yeast fermentation. S. Kostychev and S. Soldatenkov. Z. physiol. Chem. 176, 287-91 (1928).

Formation of pyruvic acid as an intermediate step in the alcoholic cleavage of sugar. Its isolation as the chief product of fermentation. C. Neuberg and M. Kobel. Biochem. Z. 216, 493-6 (1929).

Demonstration of pyruvic acid in yeast fermentation. G. Klein and W. Fuchs. Biochem. Z. 213, 40-64 (1929).

Production of the methylglyoxal and pyruvic acid step of alcoholic sugar cleavage as a demonstration experiment. C. Neuberg and M. Kobel. Ber. 63B, 1986-9 (1930).

Further studies on the formation of methylglyoxal and pyruvic acid by yeast under the influence of various plasmolytic substances. C. Neuberg and M. Kobel. Biochem. Z. 229, 255-62 (1930).

Decomposition of non-phosphorated sugar by yeast with the formation of glycerol and pyruvic acid. C. Neuberg and M. Kobel. Biochem. Z. 229, 446-54 (1930).

The formation of pyruvic acid in yeast fermentation. C. Neuberg and M. Kobel. Biochem. Z. 219, 490-4 (1930).

The balance in the fourth form of fermentation in the cell-free yeast fermentation. M. Kobel and M. Scheuer. Biochem. Z. 299, 238-47 (1930).

Transformation of glyceric acid diphosphate to pyruvic acid. C. Neuberg, W. Schuchardt and A. Vercellone. Biochem. Z. 271, 229-32 (1934).

The utilization of pyruvic acid by bakers' yeast. C. V. Smythe. J. Biol. Chem. 125, 635-51 (1938).

Acylolins. VI. Isolation and optical activity of the acetoins formed in the fermentation of pyruvic acid by fresh yeast, dried yeast and maceration juice. W. Dirscherl and A. Schollig. Z. physiol. Chem. 252, 53-69 (1938).

Studies on the decarboxylation of pyruvic acid. W. L. Liebknecht. Biochem. Z. 303, 101-11 (1939).

Enzymic processes in yeast. I. Reactions of pyruvic acid. H. v. Euler and B. Högborg. Arkiv Kemi Mineral. Geol. 14B, No. 13, 6 pp. (1940).

Transformations of pyruvic acid by yeast enzymes. H. v. Euler, L. Ahlström and B. Högborg. Z. physiol. Chem. 267, 154-62 (1940).

Pyruvic acid in yeast, blood and spleen. H. v. Euler and B. Högborg. Arkiv Kemi Mineral. Geol. 14B, No. 29, 5 pp (1941).

Influence of carbon monoxide, cysteine, glutathione, iodoacetic acid and fluoride on the transformation of pyruvic acid by bakers' yeast. J. Runnström and K. Brandt. Arkiv Kemi Mineral. Geol. 15A, No. 6, 29 pp. (1941).

Transformation of pyruvic acid by bakers' yeast. J. Runnström and E. Sperber. Arkiv Kemi Mineral. Geol. 15A, No. 5, 25 pp. (1941).

Miscellaneous Raw Materials for Growing

Alcohol and yeast from banana flour. C. Nagel. Z. Spiritusind. 35, 185 (1912).

Production of yeast for beet mash, according to the lactic acid process. H. Lange. Z. Spiritusind. 37, 554-5 (1914).

Outline of the preparation of yeast (for distilleries). G. Foth. Z. Spiritusind. 39, 374-5 (1916).

Purification of the cossette press waters and their utilization in the manufacture of yeast feeds. O. Reinke. Deut. Zuckerind. 46, 136-8 151-3 (1921).

Potato flakes for yeast manufacturing. W. Kilp. Z. Spiritusind. 55, 201 (1932).

Substitutes for malt as the nutrient for the yeast in grain-potato distilleries. A. Berenshtein. Spirto-Vodochnaya Prom. 14, No. 6, 27-8 (1937); Chem. Abstr. 33, 7480 (1939).

The production of alcohol and yeast from plant waste. N. Gutgerts. Spirto-Vodochnaya Prom. 14, No. 10-11, 52-5 (1937); Chem. Abstr. 34, 4222 (1940).

The use of orange peel for the manufacture of yeast. A. Reifenberg and L. Brisk. Hadar 10, 197 (1937).

Potato flakes as a substitute for rye meal in preparing seed yeast for distilleries. W. Kilp. Z. Spiritusind. 60, 249 (1937).

Hydrolysis of vegetable waste. N. D. Pryanishnikov and S. G. Mashevitskaya. J. Appl. Chem., Leningrad, 10, 1573-7 (1578 in French) (1937).

Hydrolysis of vegetable residues and production of alcohol and yeast from the hydrolyzates. N. Gutherz. Spirto-Vodochnaya Prom. 15, No. 8, 20-3 (1938); Chem. Abstr. 33, 7951 (1939).

The use of cacao husks for biological protein synthesis. Increase of nutritive value of cacao husks. G. Pfeiffer. Chem. Ztg. 62, 718-20 (1938).

Neutralization and purification of the hydrolyzate of straw for use as a medium for growth of forage yeast. S. G. Mashevitskaya. J. Appl. Chem., Leningrad, 12, 1034-8 (1038 in French) (1939).

Must press water from the drying of beet leaves, which contains sugar and protein, be discarded as waste difficult to dispose of and of no economic value? M. v. Lillienkiold. Deut. Zuckerind. 65, 176 (1940).

The use of "green water" from the treatment of beet leaves. H. Claasson. Deut. Zuckerind. 65, 192 (1940).

The state of the utilization of lignite. R. Beyschlag. Braunkohle 39, 399-403 (1940).

Yeast from whey. L. Enebo, H. Lundin and K. Myrback. Svensk Kem.Tid. 53, 96-108, 137-147 (1941).

The whey problem. J. G. Davis. Milk Trade Gaz. 12, No. 256,4 (1941); Chem. Abstr. 35, 5198 (1941).

Some possibilities for improving the protein situation. H. Lundin. Kungl.Landbruksakad. Tid. 81, 317-25 (1942)(German summary).

Yeast from whey. II. L. Enebo, H. Lundin and K. Myrback. Österr. Chem. Ztg. 45, 34-8 (1942).

The hydrolysis of peat-culture medium for yeast. G. Oschinsky. Chem. Abstr. 38, 3412 (1944).

Feed yeast and industrial alcohol from citrus-waste press juice. A. J. Nolte, H. W. von Loesecke and G. N. Pulley. Ind. Eng. Chem. 34, 670-3 (1942).

Cider "bottoms" or "lies." D. W. Steuart. Analyst 67, 53 (1942)

Yeast from whey. L. Enebo, H. Lundin and K. Myrback. Österr. Chem. Ztg. 45, 9-15 (1942).

Fruit juices yield food yeast. J. J. Stubbs, W. M. Noble and J. C. Lewis. Food Industries 16, No. 9, 694-96, 751 (1944).

Effect on Renal Function

Activity of yeast extract in the prevention of renal hypertrophy caused by high protein diets. B. B. Longwell, R.P. Johnston and R. M. Hill. J. Nutrition 12, 155-64 (1936).

Chronic nephritis in rats fed high-protein diets. N. R. Blatherwick and E. M. Medlar. Arch. Intern. Med. 59, 572-96 (1937).

The role of vitamins B₂, B₄ and B₆ in adrenal insufficiency (experiments with yeast extracts). L. Laszt and F. Verzar. Pflüger's Arch. ges. Physiol. 239, 136-42 (1937).

Experimental renal insufficiency produced by partial nephrectomy.

XIV. Diets containing dried whole yeast. A. Chanutin and S.

Ludewig. Arch. Intern. Med. 64, 756-66 (1939).

Non-effect of a high yeast diet on the survival of adrenalectomized rats. R. Marrazzi and R. Gaunt. Proc. Soc. Exptl. Biol. Med. 41, 65-7 (1939).

Respiration

Respiration and "dead oxidation" of yeast. V. Grafe. Allg. Z. Bierbrau. Malzfabr. 36, 377-80, 387-9, 397-9, 409-10, 419-21 (1908); Chem. Abstr. 2, 3256 (1908).

Respiration of yeast under different conditions. Th. Bokorny. Allg. Brauer-Hopfen-Ztg. 48, 2171 (1908).

The respiration of dead cells. II. Oxidation processes in dead cells and yeast extracts. O. Meyerhof. Arch. ges. Physiol. 170, 367-427 (1918); III. The excitation of respiration in washed acetone yeast and the residue from the ultrafiltration of yeast juice. Ibid. 428-75.

Cell respiration. I. Respiration of yeast cells. P. Roma and K. Grassheim. Biochem. Z. 134, 146-162 (1922); II. The action of quinine on the respiration of living yeast cells. Ibid. 140, 493-516 (1923).

The relation between splitting reactions and respiration in the cell. O. Meyerhof. Ber. 58, 991-1001 (1925).

Influence of thyreoidin, cerebrin and cordin upon the anaerobic respiration of yeast. L. P. Rosenow. Biochem. Z. 159, 235-9 (1925).

Biochemistry of complex salt solutions. II. The effect of ferrous and manganous ions on the respiration and fermentation of yeast. K. Harpuder. Biochem. Z. 183, 58-62 (1927).

Influence of carbon monoxide and light on indophenoloxidase of yeast cells. D. Keilin. Nature 119, 670-1 (1927).

The influence of carbon monoxide and nitric oxide on respiration and fermentation. O. Warburg. Biochem. Z. 189, 354-80 (1927).

Stimulation in individual cells. R. Meier. Arch. exptl. Path. Pharmakol. 122, 129-58 (1927).

Biological disintegration and respiration processes with various groups of substances. H. v. Euler, R. Nilsson and D. Runehjelm. Z. physiol. Chem. 169, 123-63 (1927).

The effect of ultraviolet radiation on the respiration of avian erythrocytes and yeast cells. G. Suranyi and M. Vermes. Magyar Orvosi Arch. 30, 585-90 (1929); Chem. Abstr. 25, 2162 (1931).

The inhibition of respiration by hydrocyanic acid. H. L. Alt. Biochem. Z. 221, 498-501 (1930).

Modification of the degree of fermentation and of the respiration quotient of yeast. O. Meyerhof and K. Iwasaki. Biochem. Z. 226, 16-31 (1930).

Influence of neutral red on yeast respiration. M. Geiger-Huber. Proc. Acad. Sci. Amsterdam 33, 1059-68 (1930).

Respiration and fermentation of top and bottom beer yeast. K. Trautwein and J. Wassermann. Biochem. Z. 229, 128-53 (1930).

The specific inhibition of the alcoholic fermentation of yeast without interference with the process of respiration, the reaction of Pasteur-Meyerhof or the process of multiplication. J. Cayrol and L. Genevois. Compt. rend. 192, 1494-6 (1931).

The role of phosphate in alcoholic fermentation and respiration of yeast. A. M. Malkov. Biochem. Z. 62, 185-95 (1933).

The presumed suitability of maltose as a respiration substrate for non-maltose-fermenting yeasts. A. J. Kluyver and J. C. Hoogerheide. Proc. Acad. Sci. Amsterdam 36, 605-9 (1933).

Influence of monoacetic acid on the respiration and the fermentation of yeast. A. J. Kluyver and J. C. Hoogerheide. Proc. Acad. Sci. Amsterdam 36, 596-605 (1933).

Effect of 2, 4-dinitrophenol on the respiration of yeasts. L. Plantefol. Compt. rend. soc. biol. 113, 147-50 (1933).

Respiration of yeast in water containing deuterium oxide. G. W. Taylor and E. N. Harvey. Proc. Soc. Exptl. Biol. Med. 31, 954-7 (1934).

The influence of the concentration of respiration material upon the rate of respiration of plants (yeast). M. Geiger-Huber. Jahrb. wiss. Bot. 81, 1-34 (1934).

Effects of 2,4-dinitrophenol on respiration of commercial cake yeast. J. Field, 2nd., A. W. Martin and S. M. Field. Proc. Soc. Exptl. Biol. Med. 32, 1043-6 (1935).

Measuring the oxygen consumption of yeast by a new principle. G. Neumann. Biochem. Z. 281, 181-5 (1935).

The influence of carbon monoxide on the respiration of yeast cells in various substrates. Model experiments in the physiology of fertilization. A. Orstrom. Protoplasma 24, 177-85 (1935).

The action of 2,6- and 2,5-dinitrophenol and of the mononitrophenols on yeast respiration. J. Field, Jr., A. W. Martin and S. M. Field. J. Pharmacol. 53, 314-26 (1935).

Respiration of yeast. J. Giaja and L. Markovic. Compt. rend. soc. biol. 119, 639-41 (1935).

Relation between fermentation and respiration in yeast. L. Genevois and P. Cayrol. Ann. ferment. 1, 361-9 (1935).

Changes in the rate of respiration of bakers' yeast during assimilation. T. J. B. Stier and M. I. Newton. J. Cellular Comp. Physiol. 13, 345-51 (1936).

The kinetics of cell respiration. I. The rate of oxygen consumption by Saccharomyces wanching as a function of pH. P. S. Tang. J. Cellular Comp. Physiol. 7, 475-93 (1936); II. Parallelism between the rate of oxygen consumption by Saccharomyces wanching and the change in optical rotation of glucose in boric acid buffers. Ibid. 8, 109-15 (1936); III. The effect of ultraviolet light on the rate of oxygen consumption by Saccharomyces wanching. Ibid. 11, 7-23.

Mechanism of the oxidation process. XLIII. Several observations on the inhibition of respiration and fermentation processes of yeast. H. Wieland, K. Rauch and A. F. Thompson. Ann. 521, 214-26 (1936).

Cell respiration and carbon dioxide assimilation in heavy water. K. Shibata and A. Watanabe. Acta Phytochim. 9, 107-14 (1936).

A kinetic analysis of the endogenous respiration of bakers' yeast. T. J. B. Stier and J. M. Stannard. J. Gen. Physiol. 19, 461-77 (1936).

Influence of carbonic acid on plant respiration and yeast. F. Hamon. Ann. physiol. physicochim. biol. 12, 940-82 (1936).

The function of l-ascorbic acid in the life of plants and yeasts. I. A. Golyanitskii and K. A. Bryushkova. Biol. Zhur. 5, 1083-90 (1936).

Influence of substrate on the respiration of and fermentation by yeast cells. W. Libbrecht. Naturw. Tijdschr. 18, 84 (1936).

Mechanism of the action of the cytochrome components in cell respiration. H. Tamiya and Y. Ogura. Acta phytochim. 9, 123-58 (1937).

Kinetics of yeast respiration. G. Emodi and E. Sárkány. Biochem. Z. 290, 71-90 (1937).

The influence of increased oxygen tension on the respiration and fermentation of yeast. L. Massart. Arch. intern. pharmacodynamie 60, 48-55 (1938).

Fatty acids from yeast as respiratory factors. E. S. Cook and C. W. Kreke. Nature 142, 719 (1938).

Fractions from yeast which stimulate the respiration of yeast and animal tissues. E. S. Cook, C. W. Kreke and L. G. Nutini. Stud. Inst. Divi Thomae 2, 23-37 (1938).

A note on the effect of tissue extracts upon the respiration of yeast. Sister M. V. Ruddy. Stud. Inst. Divi Thomae 2, 21-2 (1938).

Action of cysteine on respiration, fermentation and synthesis in yeast cells. J. Runnstrom and E. Sperber. Nature 141, 689-90 (1938).

Influence of the nitrogenous nutrition on the respiration and fermentative power of bakers' yeast. P. Beraud. Compt. rend. soc. biol. 131, 708-10 (1939).

Effect of cyanide on the respiration of bakers' yeast in various concentrations of dextrose. B. Commoner. J. Cellular Compt. Physiol. 13, 121-38 (1939).

Cell respiration. A. Szent-Györgyi. Ber. 72A, 53-61 (1939).

Specific effect of two stimulating factors upon the respiration of yeast and liver cells. Sister M. V. Ruddy. Arch. exptl. Zellforsch. Gewebezücht. 22, 559-606 (1939).

Respiratory activity of a steam distillate from yeast. E. S. Cook and C. W. Kreke. Stud. Inst. Divi Thomae 2, 215-29 (1939).

Malt combings as a source of respiratory factor for yeast and skin. E. S. Cook and C. W. Kreke. Stud. Inst. Divi Thomae 2, 173-8 (1939).

Solubility behaviour of respiratory factors from yeast. E. S. Cook and E. M. Walter. Stud. Inst. Divi Thomae 2, 239-45 (1939).

Respiration in yeast. B. Steinert. Commun. Sci. Pract. Brew. Wallerstein Labs. No. 7, 33-9 (1939).

The effect of 1, 2, 5, 6-dibenzanthracene on the growth and respiration of yeast. E. S. Cook, Sister M. J. Hart and R. A. Joly. Am. J. Cancer 35, 543-5 (1939).

The effect of carbon monoxide on the endogenous respiration of bakers' yeast. J. N. Stannard. J. Cellular Comp. Physiol. 16, 389-98 (1940).

The suitability of disaccharides as respiration and assimilation substrates for yeasts which do not ferment sugars. A. J. Kluver and M. T. J. Custers. Antonie van Leeuwenhoek. 6, 121-162 (1940).

Phosphorylation of glucose in living yeast in the initial stationary phase of alcoholic fermentation. Z. Dische. Compt. rend. soc. biol. 133, 380-4 (1940).

Effect of amino acids, of vitamin B complex and other compounds on the respiration of yeast. E. S. Cook, E. M. Walter and Sister M. R. Eilert. Proc. Soc. Exptl. Biol. Med. 44, 547-51 (1940).

The effect of some saturated fatty acids on the respiration of bakers' yeast. E. S. Cook and M. N. Morgan. Biochem. J. 34, 15-20 (1940).

Yeast grown in an inorganic medium. P. Beraud. Compt. rend. soc. biol. 135, 520-3 (1941).

The photochemical absorption spectra of the Pasteur enzyme and the respiratory enzyme in yeast. J. L. Melnick. J. Biol. Chem. 141, 269-81 (1941).

The nature of the stimulation of yeast respiration by chloroform-preserved cytochrome c extracts. W. R. Carroll and T. J. B. Stier. J. Biol. Chem. 137, 787-8 (1941).

The respiration of bakers' yeast at low oxygen tension. R. J. Winzler. J. Cellular Comp. Physiol. 17, 263-76 (1941).

Stimulation of yeast respiration by ultraviolet radiations. A. C. Giese. J. Cellular Comp. Physiol. 20, 35-46 (1942).

Separation of an "activity" metabolism from the total respiration of yeast by the effects of ethyl carbamate. K. C. Fisher and J. R. Stern. J. Cellular Comp. Physiol. 19, 109-22 (1942).

Inhibition of the effect of β -alanine on the respiration of yeast by β -aminobutyric acid. V. Hartelius. Naturwissenschaften 41, 440-1 (1943).

Effects of yeast extracts and phenylmercuric nitrate on yeast respiration and growth. E. S. Cook and C. W. Kreke. Proc. Soc. Exptl. Biol. Med. 53, 222-5 (1943).

The effect of β -alanine on the ratio respiration: fermentation of yeast. V. Hartelius. Naturwissenschaften 30, 660 (1942).

Spectroscopy

An absorption band in the yellow of bakers' yeast. O. Warburg and E. Haas. Naturwissenschaften 22, 207 (1934).

Ultraviolet absorption spectra of active and inactive yeast. E. W. Landen and F. M. Uber. Proc. Soc. Exptl. Biol. Med. 42, 559-63 (1939).

Absorption and fluorescence spectra in relation to the photolethal action of methylcholanthrene on yeast. A. Hollaender, P. A. Cole and F. S. Brackett. Am. J. Cancer 37, 265-70 (1939).

Spectroscopic analysis of the mineral content of yeast growing on synthetic and natural media. O. W. Richards and M. C. Troutman. J. Bact. 39, 739-46 (1940).

Proliferation-promoting properties and ultraviolet absorption spectra of fractions from yeast. E. S. Cook, Sister M. J. Hart and Sister M. M. Stimson. Biochem. J. 34, 1580-7 (1940).

The ultraviolet spectrum of yeast and meat extracts. J. Schormüller. Z. Untersuch. Lebensm. 79, 46-57 (1940).

Staining

Staining of yeast cells by methylene blue, etc. C. G. Matthews. J. Inst. Brewing 20, 488-96 (1914).

The capacity for adsorption of living yeast. P. Röhland and F. Heyder. Kolloid Z. 17, 139-41 (1915).

Behavior of several dyestuffs toward the yeast cell. H. v. Euler and N. Florell. Arkiv Kemi Mineral. Geol. 7, No. 18, 1-27 (1919).

The action of methylene blue and certain other dyes on living and dead yeast. C. G. Fraser. J. Phys. Chem. 24, 741-8 (1920).

The action of salts on decolorization of methylene blue by various kinds of yeast. H. Kumagawa. Biochem. Z. 121, 150-63 (1921).

Fat coloration in yeast as a criterion of age, quality, and degeneration. Bernfeld. Wochschr. Brau. 39, 195 (1922).

Microchemical test for nucleic acid of the thymonucleic acid type and the selective staining of cell nuclei in microscopic preparations. R. Feulgen and H. Rossenbeck. Z. physiol. Chem. 135, 203-48 (1924).

Immunity of the micellar granules. A. Lumière. Rev. gén. colloïdes 3, 8-12 (1925).

The chemistry of staining. II. The technic of obtaining nucleic acid-free cells. J. Schumacher. Chem. Zelle Gewebe 13, 191-209 (1926).

Studies in adsorption by an optical method. Fixation of methylene blue by yeast phosphoprotein sol within the disperse phase. R. Riwlin. J. Chem. Soc. 1926, 2300-3 (1926).

Methylene-blue studies. J. Fuchs. Wochschr. Brau. 46, 437-40 (1929).

The staining of bottom fermentation yeast with methylene blue. H. Haehn and M. Glaubitz. Wochschr. Brau. 46, 315-20 (1929).

Staining methods for bacteria and yeasts. W. E. Maneval. Stain Tech. 4, 21-5 (1929).

Staining of live yeast cells. W. Brandrup. Apoth. Ztg. 45, 522 (1930).

Gram reaction in crushed yeasts. H. A. Kemp. Stain Tech. 6, 53-6 (1931).

The methylene-blue staining of yeast cells and studies on the permeability of the yeast-cell membrane. I. H. Fink. Z. physiol. Chem. 195, 2105-40 (1931); II. An improved staining fluid for recognition of dead yeast cells. H. Fink and R. Kuhles. Ibid. 215, 65-6 (1933).

Staining spores of Schizosaccharomyces. W. Oehmann. Wochschr. Brau. 49, 381-2 (1932).

Gram reaction. Action of different fixatives on the resistance of decolorization. R. Delétang. Compt. rend. soc. biol. 109, 162-3 (1932).

The nucleal reaction with yeasts. E. Rochlin. Zentr. Bakt. Parasitenk., Abt. II, 88, 304-6 (1933).

The effect of organic dyes upon cell and organ functions. III. The fermentation by yeast cells and pressed tissue juices in the presence of organic dyes. F. Axmacher. Arch. exptl. Path. Pharmacol. 170, 476-91 (1933); IV. The absorption of dyestuff by living cells (yeast). Ibid. 171, 289-310 (1933); V. The poisoning of zymase or its specific groups. F. Axmacher and G. Opetz. Ibid. 174, 427-39 (1934); VI. The mechanism of the absorption of dyes by yeast cells. F. Axmacher and H. Narath. Ibid. 175, 293-306 (1934).

Mechanism of oxidation processes. XXXIX. Dehydrogenation by yeast in the presence of methylene blue and quinone. H. Wieland, O. B. Claren and P. Couceiro. Ann. 509, 182-200 (1934).

Action of various dyestuffs on fermentation and phosphate synthesis in yeast extract. L. Michaelis, V. Moragues-Gonzalez and C. V. Smythe. Enzymologia 3, 242-51 (1937)(in English).

The microscopic differentiation of yeast cells and starch grains through differential staining. E. Schmidt. Mühlenlab. 8, 137-42 (1938) Chem. Abstr. 33, 7907 (1939).

Is the fixation of vital stains by yeast cells an adsorption phenomenon? A. Guilliermond, R. Gautheret and A. Buchy. Compt. rend. soc. biol. 131, 408-11 (1939).

Action of dyes on yeasts. K. Higuti. Japan J. Dermatol. Urol. 45, 125 (1939).

Sterols

Ergosterol of yeast. A. Windaus and W. Grosskopf. Z. physiol. Chem. 124, 8-14 (1922).

Ergosterol of yeast. I. F. Reindel, E. Walter and H. Rauch. Ann. 452, 34-46 (1927); II. F. Reindel and E. Walter. Ibid. 460, 212-24 (1928); III. F. Reindel. Ibid. 466, 131-47 (1928); IV. F. Reindel and A. Detzel. Ibid. 475, 78-86 (1929).

The unsaponifiable matter of yeast fat. C.G. Daubney and I. S. Maclean. Biochem. J. 21, 869 (1927).

Absorption spectra of oils and oil constituents with special reference to pro-vitamin D. I. M. Heilbron, E. D. Kamm and R. A. Morton. Biochem. J. 21, 1279-83 (1927).

Isolation of a second sterol from yeast fat. I. S. Maclean. Biochem. J. 22, 22-6 (1928).

The ergosterol content of yeast. A. Heiduschka and H. Lindner. Z. physiol. Chem. 181, 15-23 (1929).

Studies on experimental rickets. III. The isolation of ergosterol from brewers' yeast and the activation of ergosterol by ultraviolet light. S. Izume, Y. Yoshimaru and I. Konatsubara. Rept. Central Lab. S. Manchuria Ry. Co., 1929, 18-21 (1929).

Sterols in yeast. H. Wieland and M. Asano. Ann. 473, 300-13 (1929); II. H. Wieland and G. A. C. Gough. Ibid. 482, 36-49 (1930); III. H. Wieland and W. M. Stanley. Ibid. 489, 31-42 (1931).

Physical and biological studies on the dextrorotatory sterol of beer yeast. R. Fabre and H. Simonnet. Compt. rend. 188, 1312-5 (1929).

A d-rotatory sterol from yeast, zymosterol. H. Penau and G. Tanrét. Compt. rend. 188, 1317-19 (1929).

The photochemical activity of various sterols and the nature of their action. L. Hugounenq and E. Couture. Compt. rend. 189, 47-9 (1929).

Factors determining the ergosterol content of yeast. I. Species. C. E. Bills, O. N. Massengale and P. S. Prickett. J. Biol. Chem. 87, 259-64 (1930); II. Carbohydrate sources. Ibid. 94, 213-9 (1931).

Occurrence of α -dihydroergosterol as an impurity in yeast ergosterol. R. K. Ballow. *Biochem. J.* 25, 87-94 (1931).

Cerevisterol, a sterol accompanying ergosterol in yeast. E. M. Honeywell and C. E. Bills. *J. Biol. Chem.* 99, 71-8 (1932).

Ergosterol and yeast. C. Ruppel and E. Ruppel. *Bull. acad. roy. med. Belg.* (5) 13, 48-60 (1933).

Determination of ergosterol and the total sterol content of yeast. F. Bilger, W. Halden and M. K. Zacherl. *Mikrochemie* 15, 119-40 (1934).

The fat and lipid metabolism of yeasts. III. Sterol and fat enrichment in bottom brewers' yeast. W. Halden. *Z. physiol. Chem.* 225, 249-72 (1934).

Presence of sterols in vascular cryptogams. E. Montignie. *Bull. soc. chim.* (5) 2, 1219 (1935).

Increasing the ergosterol and fat content of brewery yeast. W. Halden. *Fettchem. Umschau* 42, 29-32 (1935).

Preparation of pure B₁ and B₂ (flavin), together with ergosterol, from yeast. A. V. Trufanov. *Biokhimiya* 1, 498-510 (1936)(511 in English).

The sterols of brewers' yeast. J. Galimard. *Bull. soc. sci. hyg. aliment.* 24, 417-18 (1936)(Abstr. of thesis).

Fat and lipid metabolism in yeast. V. Quantitative relations with the biologic formation of ergosterol. F. Bilger, W. Halden, E. Mayer-Pitsch and M. Pestemer. *Monatsh.* 70, 259-72 (1937).

The effect of cultivation conditions on the accumulation of ergosterol in yeasts. F. L. Trainina. *Proc. Sci. Inst. Vitamin Res. U.S.S.R.* 2 No. 1, 53-61 (1937)(61-2 in English).

Secondary sterols of yeast. IV. Cryptosterol. H. Wieland, H. Pasedach and A. Ballauf. *Ann.* 529, 68-83 (1937); V. Zymosterol and ascosterol. H. Wieland and Y. Kanaoka. *Ibid.* 530, 146-51 (1937); VI. Cryptosterol. H. Wieland and E. Joost. *Ibid.* 546, 103-19 (1941); VII. Zymosterol. H. Wieland, F. Rath and W. Benend. *Ibid.* 548, 19-33 (1941); VIII. The constitution of ascosterol, fecosterol, episterol and neosterol. H. Wieland, F. Rath and H. Hesse. *Ibid.* 548, 34-49 (1941).

Sterol production in yeast cultivated according to different procedures. F. Reindel, K. Niederländer and R. Pfundt. Biochem. Z. 291, 1-6 (1937).

Ergosterol content of various yeasts. N. I. Proskuryakov, E. M. Popova and F. M. Osipov. Biokhimiya 3, 397-405 (1938).

A sterol indispensable to yeast. W. R. Devloo. Arch. intern. physiol. 46, 157-88 (1938).

Effect of drying on the ergosterol content of yeast. B. V. Bak. Biokhimiya 4, 93-7 (1939).

Ergosterol content of yeast during autolysis. A. V. Trufanov and V. A. Kirsanova. Biokhimiya 4, 377-80 (1939).

Sterol metabolism of microorganisms. I. Yeast. W. H. Maguigan and E. Walker. Biochem. J. 34, 804-13 (1940).

The formation of ergosterol in yeast. J. Zorkoczy. Congr. intern. tech. chim. ind. agr. (Budapest 1939) 6, Compt. rend., tome 3, 10-19 (1940); Chem. Abstr. 36, 5850 (1942).

Distribution and conditions for accumulation of ergosterol (provitamin D₂) in yeast organisms. I. Content of ergosterol in yeast organisms. T. A. Tauson. Mikrobiologiya 11, 46-58 (1942) (English summary).

Relation between lanosterol and cryptosterol, secondary sterols from yeast X. H. Wieland, W. Benend. Z. physiol. Chem. 274, 215-22 (1942).

Ergosterol content of certain yeasts and fungi. S. Ramaswamy, B. Sreenivasan and M. Sreenivasaya. J. Sci. Ind. Res., Delhi, I, 74-81 (1943).

Assimilation of Sugars

The assimilation of various carbohydrates by different yeasts. P. Lindner and K. Saito. Wochschr. Brau. 27, 509-13 (1910).

Assimilability of maltose by yeast. A. J. Kluyver. Biochem. Z. 52, 486-93 (1913).

Remarks on A. J. Kluyver's paper on the assimilability of maltose by yeasts. P. Lindner. Biochem. Z. 56, 163-6 (1913).

Top-fermenting yeasts and their sugar transforming capacity. F. Schönfeld. Wochschr. Brau. 32, 167-9 (1915).

Sugar binding and related synthetic processes of yeast cells. E. Wertheimer. Fermentforsch. 11, 22-36 (1929).

Utilization of pentoses by the yeast *Oöspora* No. 208. E. A. Peevako and N. T. Altovskaya. Schr. zentr. biochem. Forsch. Inst. Nahr-Genüsmittelind. U.S.S.R. 2, 212-20 (1932); Chem. Abstr. 27, 5471 (1933).

Removal of sugars from dilute solutions. J. L. Baker and H. F. E. Hulton. Biochem. J. 27, 1040-3 (1933).

Sugar assimilation by living yeast. Changes taking place in the first few minutes. A. Mirski and E. Wertheimer. Enzymologia 7, 58-71 (1939)(in German).

Fermentation of Different Sugars

The fermentation of galactose by yeast and yeast juice. Preliminary communication. A. Harden and R. V. Norris. Proc. Roy. Soc. London, B82, 645-9 (1910).

Further fermentation experiments with various yeasts and sugars. P. Lindner. Wochschr. Brau. 28, 61-4 (1911).

Yeast fermentation. H. v. Euler and G. Lundquist. Z. physiol. Chem. 72, 97-112 (1911).

Observations on the fermentation of carbohydrates by living and dead yeast cells. H. v. Euler. Z. Garungsphysiol. 5, 1-4 (1914).

Complete fermentation of rather concentrated raw sugar solutions by yeast nourished by mineral salts exclusively. C. Nagel. Z. Spiritusind. 38, 122-3 (1915).

The adaptation of a yeast to galactose. H. v. Euler and I. Laurin. Arkiv Kemi Mineral. Geol. 7, No. 28, 11 pp. (1920).

Selective fermentation with galactose-adapted yeasts. R. Willstätter and H. Sobotka. Z. physiol. Chem. 123, 176-80 (1922).

Fermentation of mannite by yeasts. S. L'voo. J. Russ. Bot. Congr., Petrograd, 1, 62 (1921)(in Russian); Chem. Abstr. 19, 3103 (1925).

Are there dextrin-fermenting yeasts? G. Staiger and M. Glaubitz. Z. Spiritusind. 48, 320-1 (1925).

The fermenting power of fresh yeast toward galactose induced by preliminary treatment and the persistence of this property. H. v. Euler and T. Lovgren. *Z. physiol. Chem.* 146, 44-62 (1925).

The utilization of pentoses by yeasts, and the composition of plant gums. O. D. Abbott. *Mo. Agr. Expt. Sta. Res. Bull.* 85, 29 pp. (1926).

New comparative studies on the fermentation of hexosediphosphate, glucose, fructose, sucrose and invert sugar by yeast juice as well as fresh yeast under different conditions. C. Neuberg and M. Kobel. *Biochem. Z.* 174, 480-92 (1926).

The adaptation of fresh culture yeasts to galactose. H. v. Euler and B. Jansson. *Z. physiol. Chem.* 169, 226-34 (1927).

Action of yeast on sugars made optically neutral by dilute alkalies. A. Fernbach, M. Schoen and M. Mori. *Compt. rend.* 184, 168-70 (1927).

Alcoholic fermentation of glucose solutions with water exposed to the radiations of a mercury vapor lamp. R. de Fazi. *Rend. accad. Lincei, fis. mat. nat.*, (6) 5, 901-5 (1927).

The first stage of hexose dissimilation. A. J. Kluyver and A. P. Struyk. *Akad. Wet. Amsterdam Versl. nat.* 36, 608-21 (1927).

Dextrin-fermenting yeasts. G. Staiger and M. Glaubitz. *Brennerei-Ztg.* 46, 122 (1929); *Z. Spiritusind.* 52, 243 (1929).

A biochemical study of the action of yeasts and yeast-like organisms on pentose sugars. D. G. Rosa, E. B. Fred and W. H. Peterson. *Zentr. Bakt. Parasitenk., Abt. II*, 79, 86-92 (1929).

The significance of maltose fermentation in the estimation of up-to-date compressed yeast. Drews. *Z. Spiritusind.* 54, 163-4 (1931).

Some yeasts producing fermentation of concentrated sugar solutions. J. Vondrak. *Chimie & industrie, Special No.*, (Mar.) 1931, 783 (1931).

Selective fermentation of glucose and fructose by yeast. E. R. Dawson. *Biochem. J.* 26, 531-5 (1932).

Yeast fermenting dextrins. G. Staiger and M. Glaubitz. *Z. Spiritusind.* 56, 190 (1933).

The metabolism of galactose. I. Phosphorylation during galactose fermentation and its relation to the interconversion of hexoses. G. A. Grant. Biochem. J. 29, 1661-76 (1935).

The influence of acetic acid on the fermentation of sugar by yeast in the presence of alcohol. B. Porchet. Mitt. Lebensm. Hyg. 26, 18-28 (1935).

Speed of fermentation of sugars by different kinds of yeast. R. Guillemet and C. Schell. Compt. rend. soc. biol. 121, 467-9 (1936); Bull. soc. chim. biol. 18, 932-40 (1936).

Dextrin fermentation by yeast. I. A newly discovered dextrin-fermenting yeast. T. Baba. Bull. School Agr. Forest. Taihoku Imp. Univ. No. 2, 72-3 (1941)(in German).

The direct fermentation of maltose by yeast. II. J. Leibowitz and S. Hestrin. Biochem. J. 36, 772-85 (1942).

Vitamin requirements of lactose fermenting and certain other yeasts. M. Rogosa. J. Bact. 47, 15-90 (1944).

Utilization of Surplus Yeast

Utilization of yeast residues from breweries and distilleries. E. Pozzi-Escott. Bull. assoc. chim. sucr. dist. 25, 961-4 (1908).

Utilization of waste yeast. J. E. Brauer-Tuchorze. Brau-Malzind. 15, 199-203; Chem. Abstr. 8, 2594 (1914).

Practical points concerning fermentation waste with a description of a new process for pressing yeast. W. Scott. J. Inst. Brewing 21, 391-416 (1915).

A study of methods for utilizing yeasts. V. L. Sadikoo and N. P. Sinitzuin. Proc. Sci. Inst. Vitamin Res. U.S.S.R. 1, No. 1, 142-69 (169-70 in English)(1936).

The utilization of brewery yeast surplus. P. Rach. Bohm. Bierbrauer 64, 229-33, 242-6 (1937); Chem. Abstr. 31, 8818 (1937).

Utilization of distillery yeast. G. P. Pierlot. Rev. chim. ind. 7, No. 70, 60-3 (1938); Chem. Abstr. 33, 3064 (1939).

The utilization of yeast III. Preservation and utilization of waste brewers' yeast. H. Fink, F. Just, M. Glaubitz and W. Kleber. Wochschr. Brau. 58, 147-52 (1941).

Utilization of brewery by-products. P. J. F. Weber. Am. Brewer 76, No. 1, 60-1, 157-8 (1943).

Miscellaneous Therapeutic Uses

The foundations of yeast therapy. M. Barsiekow. Pharm. Ztg. 58, 117-9 (1913).

The effect of feeding yeast on antibody production. E. P. Wolf and J. H. Lewis. J. Infectious Diseases 25, 311-4 (1919).

Organic foodstuffs with specific action. XIII. Deficient oxygen supply of the cells as cause of the appearance of alimentary "dystrophy in pigeons. E. Abderhalden and E. Wertheimer. Pfluger's Arch. ges. Physiol. 194, 647-73 (1922); XIV. E. Abderhalden and E. Gellhorn. Ibid. 195, 1-21 (1922).

Yeast therapy and uric acid excretion. A. H. Smith with collaboration of H. J. Deuel, L. Ascham and F. Seibert. J. Lab. Clin. Med. 7, 473-6 (1922).

The laxative action of yeast. J. R. Murlin and H. A. Mattill. Am. J. Physiol. 64, 275-94 (1923).

A new stimulant of the gastric glands. K. M. Buikov and M. K. Petrova. Arkh. Biol. Nauk 25, 17-20 (1925).

The effect of ingestion of yeast on the leucocyte count. E. L. Heintz and W. H. Welker. Arch. Intern. Med. 35, 500-502 (1925).

Yeast preparations with respect to pharmacopeial receptivity. C. Massatsch. Pharm. Ztg. 70, 1037-8 (1925).

Studies in complement splitting with special reference to the activation of yeast absorbed and complement-deficient guinea-pig serum. E. I. Parsons. J. Immunol. 12, 47-82 (1926).

Fermentative action of medicinal yeast and certain yeast preparations. T. Sabalitschka and R. Weidlich. Apoth. Ztg. 42, 1224-5 (1927).

The water-soluble vitamins B and their utilization in the treatment of pulmonary tuberculosis. R. Lecoq. Pharm. Frang. 31, Mar. (1927); Chem. Abstr. 23, 5219 (1929).

Yeast as medicament. W. Fischer. Schweiz. Apoth. Ztg. 66, 343-4 (1928).

The response of the isolated segment of small intestine (rabbit) to extracts of yeast and other substances during their passage through the lumen. J. B. Polansky. Am. J. Physiol. 83, 488-98 (1928).

Anti-infection action of an extract of bottom yeast, lipoids and ergosterin. Alb. Benoit. Compt. rend. soc. biol. 98, 525-6 (1928).

The influence of yeast on gastric secretion. R. S. Allen and G. E. Burget. Am. J. Physiol. 84, 98-102 (1928).

The effect of yeast feeding on some blood constituents of hens. A. A. Horvath. Am. J. Physiol. 87, 208-20 (1928).

The influence of yeast on the alimentary rate. D. W. Thorup and A. J. Carlson. Am. J. Physiol. 85, 90-7 (1928).

Action of certain yeasts and more particularly alcoholic fermentation on toxins. A. Comis. Compt. rend. soc. biol. 98, 1091-3 (1928).

Experimental studies of the effect of oral administration of yeast on the carbon and oxidation quotients of urine. P. Hoffmann. Biochem. Z. 204, 208-14 (1929).

Heart block in pigeons--curative factor. C. W. Carter. Biochem. J. 24, 1811-9 (1930).

Experiments on the practical application of "Zyma" yeast products in the preparation of pills. W. Brandrup. Pharm. Weekblad 67, 33-47 (1930).

A substance producing hyperthermy, contained in brewers' yeast. A. Spinelli. Biochim. terap. sper. 17, 397-401 (1930).

The influence of yeast on protein metabolism in normal and depancreatized dogs. E. S. Nasset, H. B. Pierce and J. R. Murlin. J. Lab. Clin. Med. 16, 1151-68 (1931).

Demonstration of specific antibodies in vitro in severe allergy to fish and yeast. K. Jaffé. Klin. Wochschr. 10, 304-6 (1931).

Immunological relationships among the pneumococci. V. Anaphylaxis and precipitation between antigens and antisera of yeast of type II pneumococci. J. Y. Sugg and J. M. Neill. J. Exptl. Med. 53, 527-34 (1931).

The effect of yeast on ammonia and indole production by bacteria in culture and in feces suspensions. H. B. Pierce. J. Bact. 21, 225-37 (1931).

The pharmacology of yeast substances. K. Zipf and J. Bräkling. Arch. exptl. Path. Pharmacol. 171, 603-11 (1933).

Substances decreasing blood pressure. I. M. Toki, T. Miyoshi and N. Uyeda. J. Agr. Chem. Soc. Japan 9, 625-31 (1933); Bull. Agr. Chem. Soc. Japan 9, 78-9 (1933).

Comparative action of hyperthermia-producing agents in normal rabbits and rabbits habituated to morphine. R. Cahen. Compt. rend. soc. biol. 115, 817-18 (1934).

Results of the ingestion of cod-liver oil and yeast on calcium and phosphorus metabolism in women. H. A. Hunscher, E. Donnelson, B. Erickson (née Nims) and I. G. Macy. J. Nutrition 8, 341-6 (1934).

Active substances from higher plants and yeast in uranium poisoning. M. Jacoby and G. Eisner. Biochem. Z. 268, 322-5 (1934).

The toxicity of fish-liver oils and fishoils, and the anti-toxic effect of yeast. I. I. Yamamoto. Bull. Inst. Phys. Chem. Res., Tokyo, 13, 1-17 (1934) (in Japanese) (Abstracts in English published in Sci. Pap. Inst. Phys. Chem. Res., Tokyo, 23, Nos. 479-81); II. Antitoxic effect of alcoholic extract of yeast. Ibid. 15, 590-4 (1936).

The influence of yeast on the toxicity of liver and fish oils. I. I. Yamamoto. J. Agr. Chem. Soc. Japan 10, 264-80 (1934).

Synthetic diets for herbivora, with special reference to the toxicity of cod-liver oil. L. L. Madsen, C. M. McCay, L. A. Maynard, G. K. Davis and J. C. Woodward. Mem. Cornell Univ. Agr. Expt. Sta. 178, 53 pp. (1935)

Fructose as a substance producing alimentary disequilibrium. R. Lecoq. Compt. rend. soc. biol. 121, 226-8 (1936).

Augmentation of the gonad-stimulating action of pituitary extracts by inorganic substances, particularly copper salts. H. L. Fevold, F. L. Hisaw and R. Greep. Am. J. Physiol. 117, 68-74 (1936).

Further experiments on the effect of some yeast extract factors upon the growth of rats on high-fat diets. Chao-Yu Chen. Nutrition Bull. Coll. Agr. Natl. Univ. Peiping 3, 23-7 (1936).

The chemistry of blood coagulation. III. The chemical constituents of blood platelets and their role in blood clotting, with remarks on the activation of clotting by lipides. E. Chargaff, F. W. Bancroft and M. Stanley-Brown. J. Biol. Chem. 116, 237-51 (1936).

Favorable action of certain components of yeast extract in the production of diphtheria toxin. A. Mustafa. Compt. rend. soc. biol. 126, 558-60 (1937).

Toxic effect of high doses of liver oil and the activity of yeast in prevention of the toxicity. M. Yoshida. J. Agr. Chem. Soc. Japan 13, 120-47 (1937).

Antithyrogenic action of crystalline B. B. Sure and K. Buchanan. J. Nutrition 13, 513-19 (1937).

Behavior of estrogenic hormones under the action of fermenting yeast: biochemical transformation of estrone esters into Δ -estradiol. L. Mamoli. Ber. 71B, 2696-8 (1938).

Yeast dermatoses: contact dermatitis. O. S. Ormsby. J. Mich. State Med. Soc. 37, 135-40 (1938).

Effect of yeast on the incidence of cirrhosis produced by lead arsenate. W. C. von Glahn and F. B. Flinn. Am. J. Path. 15, 771-81 (1939).

The effect of yeast and of thiamine on the production of low-iodine goiter. P. L. Harris and R. E. Remington. J. Nutrition 17, 31-34 (1939).

Effect of injection of yeast extract on gastric secretion in dogs. E. F. Williams, Jr., W. W. Cox and T. P. Nash, Jr. Am. J. Physiol. 131, 378-81 (1940).

History of the medicinal application of yeast. A. Süssenguth. Sddeut. Apoth. Ztg. 80, 201-2 (1940).

The occurrence of amino acid decarboxylase as well as histaminase, tyramine and tryptamine oxidase in vegetable material, and the occurrence in yeast of a blood-pressure-raising substance. E. Werle and W. Boden. Biochem. Z. 304, 371-6 (1940).

The toxicity of intestinal volatile fatty acids for yeast and Esch. coli. O. Bergeim. J. Infectious Diseases 66, 222-34 (1940).

Use of yeast in the manufacture of biochemical preparations. B. Tankó. Magyar Chem. Folyóirat 47, 162-73 (1941).

Inhibition of bacteriostatic action of sulfanilamide by yeast extracts. T. A. Loomis, R. S. Hubbard and E. Neter. Proc. Soc. Exptl. Biol. Med. 47, 159-63 (1941).

The calorie intake and weight balance of hyperthyroid dogs in relation to vitamin B₁ and yeast. V. A. Drill. Am. J. Physiol. 132, 629-35 (1941).

Action of long-continued yeast intake on physiological graying of the hair. A. Lenczós. Arch. exptl. Path. Pharmacol. 197, 662-5 (1941).

Making preparations of vitamin B complex, suitable for parenteral administration. S. N. Komarov and O. S. Sherman. Proc. Sci. Inst. Vitamin Res. U.S.S.R. 3, No. 1, 98-104 (1941).

Effects of yeast and food intake on experimental carbon tetrachloride cirrhosis of the liver in the rat. J. Post, D. P. Earle, Jr., A. J. Patek, Jr., and J. Victor. Am. J. Path. 18, 661-72 (1942).

Brewers' yeast--a substitute for petrolatum. J. Kessler. Pharm. Acta Helv. 17, 47-55 (1942) (in German).

Yeast extracts to overcome depressant effects of germicide on skin respiration. E. S. Cook, C. W. Kreke, Sister M. R. Eilert and M. A. Sawyer. Proc. Soc. Exptl. Biol. Med. 50, 210-14 (1942).

The relation of the liver function, pulse rate and temperature of hyperthyroid dogs to vitamin B₁ and yeast. V. A. Drill and H. W. Hays. Am. J. Physiol. 136, 762-71 (1942).

Effect of vitamin B₁ and yeast on calorie intake and weight balance of hyperthyroid dogs. V. A. Drill and C. B. Shaffer. Endocrinology 31, 567-72 (1942).

Liver function, pulse rate and temperature of hyperthyroid dogs. Effect of a yeast-free diet and a high B diet. V. A. Drill, C. B. Shaffer and R. Overman. Am. J. Physiol. 138, 370-7 (1943).

Unidentified factor(s) in yeast and liver essential to cure of achromotrichis in dogs on synthetic diets. D. V. Frost and F. P. Dann, J. Nutrition 27, 355-62 (1944).

Effect of yeast on the toxic reactions of promin on tuberculous guinea pigs, G. M. Higgins and W. H. Feldman, Am. Rev. Tuberc. 49, 179-84 (1944).

Theses

Brüchner, R.

1931 Über quantitative Beziehungen zwischen Hefewachstum und Hefenahrung. Dresden Univ. 119 pp. (Shortened in Z. ges. Brauw. 54).

Carmichael, H. M.

1930 Properties of yeast invertase. Columbia Univ. 29 pp.

Elion, E.

1927 Role of phosphorus in the life of yeast and in alcoholic fermentation. Paris Univ. 137 pp. (Abstract Wochschr. Brau. 45, 178-82, 192-5 (1928)).

Fassnacht, H. H.

1930 A study of some properties of yeast invertase activity. Columbia Univ. 43 pp.

Fischer, W.

1927 Yeast as a medicament. Berne Univ. 33 pp.

Franck, W.

1902 Untersuchungen über pathogene Hefe. Greifswald Univ. (J. Abel Press) 29 pp.

Freedman, L.

1922 Nutritional factors in the growth of certain yeasts and bacteria. Columbia Univ. 30 pp.

Galimard, J.

1935 Recherches sur les stérols et la levure de bière. Paris Univ. 112pp. (2283).

Hessenland, F.

1892 Über die Zusammensetzung des Hefegummi. Erlangen Univ. 19 pp.

Hoehl, H

1916 Effect of feeding dry yeast and coconut cake on the milk yield of cows. Leipsic Univ. (Weida i. Thür: Thomas & Hubert) 56 pp.

Lecourt, R.

1927 . The toxicity of wheat flour for yeast. Paris Univ. 66 pp.
(Shortened in Wochschr. Brau. 45, 123 ff (1928))

Trehalose

Trehalose from yeast. G. Tanret. Bull. soc. chim. biol. 13,
598-603 (1931).

The trehalose of yeast. G. Tanret. Compt. rend. 192, 1056-8 (1931).

Trehalose content and the trehalose-binding capacity of bottom
yeast. S. Veibel. Biochem. Z. 252, 305-8 (1932).

The preparation and the determination of trehalose in yeast. A.
Steiner and C. F. Cori. Science (n.s.) 82, 422-3 (1935).

Trehalose and yeast. I. K. Myrback and B. Ortenblad. Biochem. Z.
288, 329-37 (1936); II. K. Myrback. Svensk Kem. Tid. 51, 36-7 (1939);
III. K. Myrback and B. Ortenblad. Biochem. Z. 292, 230-3 (1937);
Svensk Kem. Tid. 48, 55-60 (1936); Ibid. 49, 24-7 (1937).

The reserve carbohydrates of pressed yeast. Behavior of trehalose
in the growth and heat damage of the yeast. K. M. Brandt.
Biochem. Z. 309, 190-201 (1941).

Types

Relation between foam-holding capacity and yeast type. F.
Schonfeld. Wochschr. Brau. 29, 494-8 (1912).

The influence of certain acid destroying yeasts upon lactic
bacteria. Z. Northrup. Tech. Bull. Mich. Agr. Expt. Sta. 15, 3-35
(1912).

Sporulation of a yeast under the influence of a bacterium. A.
Sartory. Compt. rend. soc. biol. 72, 558-60 (1912).

Marine yeast. H. Coupin. Compt. rend. 160, 251-2 (1915).

New pathogenic yeast (Saccharomyces lemounieri, n. sp.). A. Sartory
and P. Lasseur. Compt. rend. soc. biol. 78, 48-9 (1915).

Some experiments conducted with pure cultures of bread yeast. W.
F. Henderson. Trans. An. Microscop. Soc. 38, 221-8 (1919).

Fermentative organisms. IV. Assimilative power of 12 species of yeast with respect to four sugars. A. Klocker. Compt. rend. trav. lab. Carlsberg 14, No. 7 (1919).

The yeast Saccharomyces thermantitonus. H. v. Euler and I. Laurin. Biochem. Z. 97, 156-70 (1919); II. Ibid. 102, 258-67 (1920).

Alcohol-producing yeasts. G. L. Fawcett. Rev. ind. agr. Tucumán 11, 100-2 (1920).

Yeasts of lambick. H. Kufferath and M. H. van Laer. Bull. soc. chim. Belg. 30, 270-6 (1921); Chimie & industrie 13, 890-900 (1925).

Longevity of certain species of yeast. A. R. Ling and D. R. Nanji. Proc. Roy. Soc. London 92B, 55-7 (1921).

Indian Mahwa. A. Lendner. Schweiz. Apoth. Ztg. 60, 713-9 (1922).

Saccharomyces odessa nov. sp. H. Schnegg and F. Oehlkers. Z. ges. Brauw. 45, 92-6, 106-7, 111-13 (1922).

Development of a wild yeast having good fermenting capacity and suitable baking strength. H. Haehn. Z. Spiritusind. 45, 231-2, 237-8, 251, 268, 275, 287 (1922).

Ester-forming yeasts. V. Weber. Biochem. Z. 129, 208-16 (1922).

A new yeast. C. A. Sagastume. An. asoc. quim. Argentina 23, 440-3 (1925).

Bottom and top fermentation yeasts. E. Rathke and W. Windisch. Wochschr. Brau. 43, 537-41 (1926).

A rare nectar yeast. J. Grüss. Wochschr. Brau. 43, 57-61 (1926).

A new fat-producing yeast. I. L. E. den Dooren de Jong. Nederland Tijdschr. Hyg. Microbiol. Serol. 1, 136-47 (1926).

Cleavage of starch by Saccharomyces sake. K. Sjöberg. Z. physiol. Chem. 162, 223-37 (1927).

Schizosaccharomyces hominis nov. sp., the first fission Saccharomyces pathogenic for man. T. Benedek. Centr. Bakt. Parasitenk., Abt. I, 104, 291-303 (1927).

Examination of a so-called "sectional" yeast. C. Bertin. Ann. fals. 20, 279-81 (1927).

A milk-fermenting yeast. C. S. R. Ayyar. Bull. Agr. Res. Inst. Pusa 183, 1-5 (1928).

Giant yeast cells. M. Holt. Trans. Roy. Soc. Can. (3) 22, III, 269-70 (1928).

Saccharomyces festinans. T. J. Ward and J. L. Baker. J. Inst. Brewing 35, 466-9 (1929).

Research results with foreign yeasts. G. Staiger and M. Glaubitz. Brenneri Ztg. 46, 131 (1929); Chem. Abstr. 24, 2542 (1930).

A study of lactose fermenting yeasts isolated from milk, cream and butter. M. Grimes and J. Doherty. Sci. Proc. Roy. Dublin Soc. 19, 261-4 (1929).

Korean koji (a kind of the so-called Chinese yeast). H. Naganiski. Rept. Central Lab. S. Manchuria Ry. Co. 1929, 41-2; Chem. Abstr. 25, 1629 (1931).

Studies in comparative biochemistry. VII. Chemistry of the special saké yeast. Yun-Ichiro Sagara. J. Biochem., Tokyo, 12, 459-71 (1930).

Resuscitation of dauer-yeast. N. A. Krassilnikov. Z. physiol. Chem. 187, 277-80 (1930).

The relation of acetic, succinic, fumaric and oxalic acids in cultures of Mucor stolonifer and some other yeasts. V. S. Butkevitch and M. V. Fedorov. Biochem. Z. 219, 87-102 (1930).

A new contribution to the study of selected yeasts. E. Kayser and Delaval. Rev. vit. 72, 325-7 (1930).

Foreign yeasts. G. Staiger and M. Glaubitz. Brenneri Ztg. 48, 44 (1931); Chem. Abstr. 25, 5734 (1931); Brenneri Ztg. 49, 42-3 (1932); Chem. Abstr. 26, 5171 (1932); Brenneri Ztg. 50, 35 (1933); Chem. Abstr. 28, 1463 (1934).

Osmophilic yeasts. IV. N. Karamboloff and G. Krumbholz. Arch. Mikrobiol. 3, 113-21 (1931).

A new vital property of yeast plasma; the preparation and the biochemical significance of hitherto unknown yeast forms. V. Jonaš. Biochem. Z. 239, 140-58 (1931).

Accessory food substances for osmophilic yeasts. I. A bioactivator in honey stimulating fermentation. A. G. Lockhead and L. Farrell. Can. J. Res. 5, 529-38 (1931).

The yeasts from plum-wine mash, which are able to resist acid. K. Suminoe. J. Agr. Chem. Soc. Japan 7, 844-51 (1931).

Chinese yeast cakes, "Ch'u." I. Some characteristics of Chinese yeast cakes. M. Yamazaki. Bull. Utsunamiya Agr. Coll. 1, No. 2, 1-24 (1932).

"Radio-races" of yeasts and their practical significance. G. Nadson and E. Pokhlina. Brodil'naya Prom. 10, No. 4, 20-3 (1933); Chem. Abstr. 28, 7293 (1934).

Phosphorylation by lactose yeast. E. Hofmann. Biochem. Z. 265, 203-8 (1933).

Molasses fermenting yeasts. Saccharomyces formosensis nov. sp. R. Nakazawa. J. Agr. Chem. Soc. Japan 9, 285-91 (1933).

Kinetics of the accumulation of organic substances in cultures containing two species of yeast. G. F. Gause. Biochem. Z. 266, 352-4 (1933).

The vitality of yeast plasma. V. Jonáš. Chimie & Industrie, Special No., (June) 1933, 1164-7 (1933).

Annual report of the fiber expert to the Government of Bengal for the year 1933-34. N. C. Basu. Ann. Rept. Dept. Agr. Bengal 1933-34, II, 51-6 (1934).

Microorganisms in fermentation products in Korea. II. Y. Takeda. J. Agr. Chem. Soc. Japan 10, 281-312 (1934).

Saccharomyces pēka nov. sp. Y. Takeda. J. Agr. Chem. Soc. Japan 10, 1280-2 (1934).

Sexual and asexual forms of yeasts and their fermentation power. J. Satawa. Bull. assoc. élèves inst. sup. ferment. Gand 35, 278-85 (1934); Chem. Abstr. 29, 2296 (1935).

Wild yeasts. P. Petit. Brasserie et malterie 23, 337-41 (1934); Chem. Abstr. 28, 2122 (1934).

Microorganisms in saké brewing at Formosa. I. Saccharomyces.
R. Nakazawa, Y. Takeda and M. Shimo. J. Agr. Chem. Soc. Japan
11, 85-97 (1935).

Investigation of the yeast mass of the "K strain" in the method
of continuous molasses fermentation. S. Lebedev and J. Skalkina.
Bordil'naya Prom. 11, No. 4 27-30 (1935?); Chem. Abstr. 31, 5939
(1936).

"Imodane" yeast of breadmaking, Saccharomyces imodane, nov. sp.
S. Yamada. J. Agr. Chem. Soc. Japan 11, 971-9 (1935).

Two new yeasts. Saccharomyces robustus nov. sp. and Saccharomyces
praecisius nov. sp. R. Nakazawa and M. Shimo. J. Agr. Chem. Soc.
Japan 12, 356-64 (1936).

Studies on the inverting power of Hungarian wine-yeasts. G.
Requinyi and I. Soos. Wein u. Rebe 18, 111-15 (1936); Chem. Abstr.
30, 8515 (1936).

A study of yeast cakes from Shantung province. Teng-Han Tang and
Cheh-Liang Kuo. J. Chem. Eng. China 3, 15-29 (1936).

The glucosides of Schizosaccharomyces. E. Hofmann. Biochem. Z.
287, 271-5 (1936).

A convenient method for the preparation of galac yeast. G. W.
Kerby and L. Atkin. J. Biol. Chem. 116, 511-13 (1936).

Fermentation of the S and R forms of yeasts. F. W. Fabian and L.
J. Wickerham. J. Bact. 31, 31-2 (1936); J. Agr. Res. 54, 147-58
(1937).

Domestic (Italian) bakers' yeast. T. Castelli. Giorn. biol. ind.
agr. aliment. 7, 90-108 (1937); Chem. Abstr. 32, 9309 (1938).

Troubles due to pure yeasts and disease yeasts. J. de Clerk.
Brasseur franç. 1, 241-3 (1937); Chem. Abstr. 31, 7592 (1937).

A new yeast isolated at Baden. J. G. Zimmermann. Zentr. Bakt.
Parasitenk., Abt. II, 95, 369-78 (1937).

"Chinese-yeast-cakes" -- "Ch'ü." II. Antylomycotic action of
Rhizopus species, isolated from the yeast-cakes of China, Manchoukou
and Korea on glutinous rice. M. Yamazaki. Bull. Utsunomiya Agr.
Coll., Sect. A, 2, 211-62 (1937).

Fast and slow types of yeast. B. Dixon. J. Inst. Brewing 44, 470-3 (1938).

Studies on yeast strain Sh. C. Leshchinskaya. Spirto-Vodochnaya Prom. 16, No. 12, 14-18 (1939).

New yeast types produced by hybridization. O. Winge and O. Laustsen. Compt. rend. trav. lab. Carlsberg, physiol., 22, 337-55 (1939).

The biology and physiology of degenerated yeast cells. V. Hulač. Chem. Listy 34, 93-7, 109-12, 126-9, 139-43 (1940); Chem. Abstr. 37, 1831 (1943).

The chemical control of conjugation of Zygosaccharomyces. W. J. Nickerson and K. V. Thimann. Am. J. Bot. 28, 617-21 (1941).

Biochemistry of Torula utilis. VI. Calculated and experimentally determined quantities of fermentation and propagation substances remaining between the cells of pressed yeast/ Correction. F. Just. Biochem. Z. 307, 248 (1941).

Development of the yeast Saccharomycodes lipophora nov. sp. A. A. Bachinskaya. Mikrobiologiya 10, 200-7 (207 in English)(1941).

Experimentally produced polyploid series of yeast. R. Bauch. Naturwissenschaften 29, 687-8 (1941).

The so-called S and R forms of yeast. II. C. Nyberg. Zentr. Bakt. Parasitenk., Abt. II, 105, 241-8 (1942); Ibid. Abt. I, 141, 364 (1939).

Biochemism of some species of Torulopsis and S. apiculatus. V. A. Berg. Mikrobiologiya 11, 212-17 (1942)(English summary).

Nutrilite requirements of osmophilic yeasts. A. G. Lockhead and G. B. Landerkin. J. Bact. 44, 1343-51 (1942).

Mahwa yeast from an alcohol factory and its vitamin content. M. B. Daver and S. S. Ahmedin Indian Med. Gaz. 79, 110-11 (1944).

Effect of Yeast on Uric Acid Excretion

The use of yeast in diet. H. Wintz. ["]Munch. med. Wochschr. 63, 445-6 (1916).

The influence of food yeast on uric acid excretion. H. Salomon. ["]Munch. med. Wochschr. 63, 454-5 (1916).

The effect of yeast upon metabolism. E. V. Still and E. M. Koch. Am. J. Physiol. 85, 33-44 (1928).

The effect of yeast ingestion on the composition of the urine and feces. H. B. Pierce. J. Biol. Chem. 98, 509-35 (1932).

Blood analyses. A. K. Andersen. Pa. Agr. Expt. Sta. Bull. 367 (Ann. Rept. 51) 7 (1938).

Influence of wood sugar yeast on purine metabolism. H. D. Cremer and L. Beisiegel. Klin. Wochschr. 22, 187-8 (1943).

Utilization of Yeast by the Human Organism

Fate of yeast in the animal body. T. Kudo. Biochem. Z. 16, 221-231 (1909).

Regarding the employment of yeast as a food product and its utilization in the human organism. W. Voltz and A. Baudrexel. Wochschr. Brau. 28, 85-88 (1911).

The utilization of yeast by the human organism. W. Voltz and A. Baudrexel. Biochem. Z. 30, 457-72 (1911).

Investigations concerning nutritive yeast (["]Nährhefe). M. Schottelius. Deut. med. Wochschr. 41, 817-9 (1915).

Nutrient yeast as food. G. Fendler and P. Borinski. Deut. med. Wochschr. 42, 670-1 (1916).

The use of yeast in diet. M. Rubner. ["]Munch. med. Wochschr. 63, 629-31 (1916).

Report on nutrition. T. B. Osborne and L. B. Mendel. Carnegie Inst. Wash. Year Book 15, 365-72 (1916).

Utilization of yeast in the animal organism. E. Schill. Biochem. Z. 87, 163-75 (1918).

Utilization of fresh and dry yeast. F. M. Kuen and K. Püringer. Biochem. Z. 271, 152-67 (1934).

Digestibility of yeast. A. Mangold, A. Columbus and A. Peham. Biedermanns Zentr., Abt. B, (n.s.) 13, 189-210 (1941).

Human utilization of thiamine and riboflavin in yeast. H. T. Parsons and J. Collord. J. Am. Dietetic Assoc. 18, 805-10 (1942).

Utilization of carotene and vitamin B in the rat. R. Treichler, A. R. Kemmerer and G. S. Fraps. J. Nutrition 24, 57-64 (1942).

Availability of vitamins in foods and food products. I. Utilization of thiamin in brewers' yeast. B. Sure and L. Easterling. Arch. Biochem. 4, 413-18 (1944).

Vitamins as Growth Promoters

Vitamin requirements of certain yeasts. F. M. Bachmann. Univ. Wis. J. Biol. Chem. 39, 235-57 (1919).

The vitamin requirement of yeast. A simple biological test for vitamin. R. J. Williams. J. Biol. Chem. 38, 465-86 (1919).

Water-soluble vitamins and compounds which accelerate fermentation. I. Method of determination and preparation of the accelerating substances from yeast and rice sediment. S. Frankel and E. Schwarz. Biochem. Z. 112, 203-35 (1920).

Nutritional requirements of yeast. I. The role of vitamins in the growth of yeast. E. I. Fulmer, V. E. Nelson and E. F. Sherwood. J. Am. Chem. Soc. 43, 186-91 (1921); II. Effect of the composition of the medium on the growth of yeast. Ibid. 191-9; III. The synthesis of water-soluble B by yeast. V. E. Nelson, E. I. Fulmer, and R. Cessna. J. Biol. Chem. 46, 77-81 (1921).

Vitamin requirements of certain yeasts and bacteria. C. Funk and H. E. Dubin. J. Biol. Chem. 48, 437-43 (1921).

The vitamin requirements of certain yeasts and bacteria. L. Freedman and C. Funk. Proc. Soc. Exptl. Biol. Med. 19, 198-201 (1922).

Composition and nutritive value of yeast grown in vitamin-free media. J. E. Darrah. Am. Food J. 17, No. 8, 19 (1922).

The presence of a yeast-growth-promoting vitamin in cane-sugar. C. Funk and L. Freedman. J. Biol. Chem. 56, 851-60 (1923).

Yeast growth stimulants. R. Baestie. Wochschr. Brau. 41, 251-3 (1924).

The influence of vitamins upon the development of yeasts and molds. V. Lepeshkin. Am. J. Bot. 11, 164-8 (1924).

The effect of growth-promoting substances of the character of vitamin D on the yeast cell. H. Lacroix. Zentr. Bakt. Parasitenk., Abt. II, 76, 417-28 (1929).

The effect of antineuritic vitamin preparations on the growth of yeasts. R. J. Williams and R. R. Roehm. J. Biol. Chem. 85, 581-90 (1930).

"Pantothenic acid," a growth determinant of universal biological occurrence. R. J. Williams, C. M. Lyman, G. H. Goodyear, J. H. Truesdail and D. Holaday. J. Am. Chem. Soc. 55, 2912-27 (1933).

Effects of inositol, crystalline vitamin B₁ and "pantothenic acid" on the growth of different strains of yeast. R. J. Williams and D. H. Saunders. Biochem. J. 28, 1887-93 (1934).

The stimulation of yeast proliferation by pantothenic acid. O. W. Richards. J. Biol. Chem. 113, 531-6 (1936).

Vitamin B₆, a growth-promoting factor for yeast. A. S. Schultz, L. Atkin and C. N. Frey. J. Am. Chem. Soc. 61, 1931 (1939).

Influence of vitamins on the activity of yeasts. M. Radomalschi. Fermentatio 1939, 33-9; Chem. Abstr. 34, 3874 (1940).

Relationship of inositol, thiamine, biotin, pantothenic acid and vitamin B₆ to the growth of yeasts. R. J. Williams, R. E. Eakin and E. E. Snell. J. Am. Chem. Soc. 62, 1204-7 (1940).

Effect of vitamin B₁ on the growth of Torula utilis. E. N. Odentsova. Mikrobiologiya 9, 253-65 (265-6 in English) (1940).

Effect of thiamine, pyrimidine and thiazole on yeast. N. Nielsen. Arch. Mikrobiol. 12, 128-30 (1941).

The effect of thiamin (vitamin B₁) on fermentation of yeast. H. Laser. Biochem. J. 35, 488-94 (1941).

The effect of vitamins on ten strains of *Saccharomyces cerevisiae*. L. H. Leonian and V. G. Lilly. Am. J. Bot. 29, 459-64 (1942).

Vitamins

The chemical nature of the "vitamines." II. Isomerism in natural antineuritic substances. R. R. Williams and A. Seidell. J. Biol. Chem. 26, 431-56 (1916).

The vitamin content of brewers' yeast. A. Seidell. J. Biol. Chem. 29, 145-54 (1917).

The vitamin content of microorganisms in relation to the composition of the culture medium. C. Eijkman, C. J. C. van Hoogenhuize and T. J. G. Derks. J. Biol. Chem. 50, 311-4 (1922).

Chemical studies on vitamins. H. v. Euler and A. Bernton. Arkiv Kemi Mineral. Geol. 8, No. 21, 9 pp. (1922).

The identity or non-identity of antineuritic and water-soluble B vitamins. P. A. Levene and M. Muhlfield. J. Biol. Chem. 57, 341-9 (1923).

Studies on yeast. V. The vitamin B content of yeast. V. G. Heller. J. Biol. Chem. 55, 385-98 (1923); The dietary properties of yeast. V. E. Nelson, V. G. Heller and E. I. Fulmer. Ibid. 57, 415-424 (1923).

The relation between water-soluble growth factors and activators of sugar disintegration. A thermostable biocatalyst in yeast. I. H. v. Euler and O. Swartz. Z. physiol. Chem. 140, 146-63 (1924).

Organic foodstuffs with specific action. XXX. E. Abderhalden and E. Wertheimer. Pflüger's Arch. ges. Physiol 202, 395-404 (1924); XXXI Ibid. 405-9 (1924).

Action of nitrous acid upon the antineuritic substance in yeast. R. A. Peters. Biochem. J. 18, 858-65 (1924).

The "third component" or heat stable factor of complement. H. R. Whitehead, J. Gordon and A. Wormall. Biochem. J. 19, 618-25 (1925).

Molasses as a source of vitamin B. V. E. Nelson, V. G. Heller and E. I. Fulmer. Ind. Eng. Chem. 17, 199-201 (1925).

The role of vitamin B in relation to the size of growing rats. T. B. Osborne and L. B. Mendel. J. Biol. Chem. 63, 233-8 (1925).

Inequality of the water-soluble B vitamin content of yeast extracts of different origins. L. Randoin and R. Lecoq. Compt. rend. 182, 1408-10 (1926).

Comparison of the vitamin B content of fresh and dried yeast. A. Scheumert and M. Schieblich. Chem. Zelle Gewebe 13, 79-86 (1926).

Sensitiveness of water-soluble vitamin B to desiccation. L. Randoin and R. Lecoq. Bull. sci.pharmacol. 34, 129-38 (1927).

Composite nature of the water-soluble B vitamin. H. Chick and M. H. Roscoe. Biochem. J. 21, 698-711 (1927); III. Dietary factors in addition to the antineuritic vitamin B₁ and the antidermatitis vitamin B₂. H. Chick and A. M. Copping. Ibid. 24, 1764-79 (1930).

A quantitative study of the problem of the multiple nature of vitamin B. H. C. Sherman and J. H. Axtmayer. J. Biol. Chem. 75, 207-12 (1927).

The vitamins of yeasts. R. Lecoq. J. pharm. chim.(8) 6, 289-95 (1927).

Water soluble vitamins of Group B. Probable existence of a thermostable and alkalinstable factor necessary to life. L. Randoin and R. Lecoq. Compt. rend. 187, 60-2 (1928).

The plural nature of vitamin B. A. G. Hogan and J. E. Hunter. J. Biol. Chem. 78, 433-44 (1928).

Vitamin B. C. H. Hunt. Science (n.s.) 67, 556 (1928).

The tripartite nature of vitamin B. R. R. Williams and R. E. Waterman. J. Biol. Chem. 78, 311-32 (1928).

Further evidence of the complex nature of vitamin B. I. Evidence that a third factor exists. C. H. Hunt. J. Biol. Chem. 79, 723-31 (1928).

Animal nutrition studies at the Ohio station. Complex nature of vitamin B. C. H. Hunt. Bull. Ohio Agr. Expt. Sta. 431, 117-9 (1929).

The vitamin B content of different yeasts and of wheat bread prepared therewith. A. Scheunert and M. Schiebllich. Biochem. Z. 212, 80-6 (1929).

Comparative studies of the vitamin B content of fresh yeast and dry yeast. A. Scheunert and M. Schiebllich. Biochem. Z. 213, 220-5 (1929).

Heat and ultraviolet irradiation as means of differentiating vitamins B and G in yeast. C. Kennedy and L. S. Palmer. J. Biol. Chem. 83, 493-6 (1929).

The effect of pH control in the autoclaving of yeast with respect to the vitamin B factors. R. R. Williams, R. E. Waterman and S. Gurin. J. Biol. Chem. 83, 321-30 (1929).

A second thermolabile water-soluble accessory factor necessary for the nutrition of the rat. V. Reader. Biochem. J. 23, 689-94 (1929).

Factor B. L. Scotti-Foglieni. Boll. soc. med. chirurg. Pavia 63, No. 5 (1929); Chem. Abstr. 25,4922 (1931).

The Williams-Waterman vitamin B₃. W. H. Eddy, S. Gurin and J. Keresztesy. J. Biol. Chem. 87, 729-40 (1930).

The stability of vitamin G as measured by its growth-stimulating effect. N. B. Guerrant and W. D. Salmon. J. Biol. Chem. 89, 199-211 (1930).

A new method of evaluating the potency of antineuritic concentrates. M. I. Smith. Pub. Health Rpts. U. S. Pub. Health Serv. 45, 116-29 (1930).

Further evidence for a third accessory "B" factor. V. Reader. Biochem. J. 24, 77-80 (1930).

Evidence for the presence of a third factor in the vitamin B complex of yeast. G. Z. Williams and R. C. Lewis. J. Biol. Chem. 89, 275-88 (1930).

Vitamin B and G contents of certain yeast samples. E. J. Quinn. F. B. Whalen and J. G. Hartley. J. Nutrition 3, 257-63 (1930).

Further biochemical studies on the antineuritic vitamin. A. Seidell and M. I. Smith. Pub. Health Repts. U. S. Publ. Health Serv. 45, 3194-3200 (1930).

Investigations on vitamin B₂. I. The sources of vitamin B₂. II. The stability of vitamin B₂. III. The chemistry of vitamin B₂. B. C. Guha. Biochem. J. 25, 945-59 (1931).

Vitamin studies. XVIII. Biological assay of food materials for vitamin A as influenced by yeast from various sources. H. E. Honeywell, R. A. Dutcher and J. O. Ely. J. Nutrition 3, 491-8 (1931).

Further evidence of the complex nature of vitamin B. II. Evidence that a third factor exists. C. H. Hunt and W. Wilder. J. Biol. Chem. 90, 279-91 (1931).

In vitro action of antineuritic yeast concentrates. N. Gavrilescu and R. A. Peters. J. Physiol. 72, 32P (1931).

Vitamin B value of tikitiki extract, tomato juice and yeast. C. B. Lara and M. Nicolas. J. Philippine Is. Med. Assoc. 10, 263-73 (1931).

The B vitamins. III. Evidence of a third vitamin B factor in yeast (B₄) is shown by growth curves and clinical symptoms of first and second litter young of mothers raised on synthetic B₁ and B₂ diets. C. U. Moore, H. B. Plymate and B. J. Andrew. Am. J. Physiol. 102, 581-97 (1932).

Vitamins in yeast. J. Grant. Science Progress 27, 319-20 (1932).

Potency of vitamin B₁ preparations. H. W. Kinnersley, J. R. P. O'Brien and R. A. Peters. Nature 130, 774 (1932).

Lipides and vitamins B. III. Are the alcohol and water soluble vitamins B also fat soluble? J. Savare. Bull. soc. chim. biol. 15, 1517-19 (1933).

Experiments on nutrition. XII. Comparative vitamin B₁ values of animal foodstuffs. R. H. A. Plimmer, W. H. Raymond and J. Lowndes. Biochem. J. 27, 58-65 (1933).

Vitamin B. P. Gyorgy, R. Kuhn and T. Wagner-Jauregg.
Naturwissenschaften 21, 560-1 (1933).

Studies on vitamin G (B₂) I. Yeast and liver preparations as a source of vitamin G (B₂). R. J. Block and L. R. Farquhar. J. Biol. Chem. 103, 643-9 (1933).

Symbionts and vitamins. A. Koch. Naturwissenschaften 21, 543 (1933).

The heat stability of vitamin B₂. III. The rate of destruction at various reactions of vitamin B₂ contained in different materials. M. H. Roscoe. Biochem. J. 27, 1540-4 (1933).

Fresh and dried yeast as sources of vitamin B. R. Walker and E. M. Nelson. Am. J. Physiol. 103, 25-9 (1933).

Vitamin B₁ and B₂ (G) contents of liver extract and brewers' yeast concentrate. D. K. Miller and C. P. Rhoads. J. Exptl. Med. 59, 315-31 (1934).

Vitamins B and G. J. F. Feaster and V. E. Nelson. Proc. Iowa Acad. Sci. 41, 149-52 (1934).

Lactoflavin in microorganisms. L. B. Pett. Biochem. J. 29, 937-44 (1935).

Content of the complex vitamin B₂ in alcohol fermentation yeasts of race No. 12. V. V. Elfremov and N. S. Yarusova. Voprosy Pitaniya 4, No. 6, 137-9 (1935).

Vitamin B₁ and blue fluorescent compounds. R. A. Peters. Nature 135, 107 (1935).

The vitamin B₁ and B₂ contents of fresh yeast, dried yeast and yeast extracts. A. Scheunert. Congr. intern. tech. chim. ind. agr. (Brussels 1935) 4, tome 2, 52-5 (1935).

Factors influencing growth and vitamin B₁ content of bakers' yeast. P. L. Pavcek, W. H. Peterson, C. A. Elvehjem, E. C. Saudek, D. Colingsworth and I. L. Baldwin. Bull. Agr. Expt. Sta. Univ. Wis. (Ann. Rept. 1934-35) 81-3 (1936).

Vitamin B₁ and B₂ content of various yeasts and relation of this content to the culture medium. H. K. Lassen. Acta Path. Microbiol. Scand. 13, 309-13 (1936).

Further study of the growth effect of the residue remaining after alcoholic extraction of yeast. M. R. Rymer and R. C. Lewis. J. Biol. Chem. 114, 361-7 (1936).

Yeast preparations. Vitamin B content. I. Keimatsu and E. Yamaguchi. J. Pharm. Soc. Japan 56, 670-9 (1936).

Vitamin B content of wood sugar yeast. A. Scheunert and M. Schieblich. Biedermanns Zentr., Abt. B, (n.s.) 8, 113-19 (1936); Ibid. 9, 173-7 (1937).

The content of dried brewers' yeast in vitamin B complex. N. S. Yarusova and V. V. Efremov. Voprosy Pitaniya 5, No. 2, 45-8 (1936); Chem. Abstr. 32, 5878 (1938).

Vitamin B₂ contents of commercial dry yeasts. Y. Sakurai and R. Sirasu. J. Agr. Chem. Soc. Japan 13, 759-60 (1937).

The water-soluble vitamins in yeast, flour and bread. A. M. Copping and M. H. Roscoe. Biochem. J. 31, 1879-1902 (1937).

Vitamin B₁ content of beer yeast. T. Ya. Palei. Mikrobiologiya. 6, 616-20 (1937).

Effect of growth conditions on yield and vitamin B₁ of yeast. P. L. Pavcek, W. H. Peterson and C. A. Elvehjem. Ind. Eng. Chem. 29, 533-41 (1937).

The effect of various factors on B₁. P. L. Pavcek, W. H. Peterson and C. A. Elvehjem. J. Bact. 33, 100 (1937).

Absorption of growth substance by shaking out with yeast. N. Nielsen. Protoplasma 30, 130-1 (1938).

The antidermatitis vitamin of yeast. R. Kuhn and G. Wendt. Ber. 71B, 780-2 (1938).

Yeast and factors determining its vitamin potency. A. M. Fischer. Brewers Digest 15, 189-90T, 192T (1938).

Evidence of a new growth factor required by chicks. E. L. R. Stokstad and P. D. V. Manning. J. Biol. Chem. 125, 687-96 (1938).

Factors affecting the vitamin B₁ content of yeast. P. L. Pavcek, W. H. Petersen and C. A. Elvehjem. Ind. Eng. Chem. 30, 802-5 (1938).

Conditions affecting the content of antidermatitis vitamin in yeast. W. H. Peterson and C. A. Elvehjem. J. Nutrition 18, 181-6 (1939).

The curative factor (vitamin H) for egg-white injury with particular reference to its presence in different foodstuffs and yeast. P. Gyorgy. J. Biol. Chem. 131, 733-44 (1939).

Occurrence of vitamin B₂ (lactoflavin) III. Vitamin B₂ in nutrient yeast and yeast vitamin extracts. J. Schormüller. Z. Untersuch. Lebensm. 77, 459-66 (1939).

Vitamin B₂ activity of extract of bakers' yeast. A. Gourévitch. Compt. rend. soc. biol. 130, 1252-4 (1939).

A chemical test for vitamin B₆ in food. M. Swaminathan. Indian J. Med. Res., 28, 427-39 (1940).

Nicotinic acid potency of food materials and certain chemical compounds. H. A. Waisman, O. Mickelsen, J. M. McKibben and C. A. Elvehjem. J. Nutrition 19, 483-92 (1940).

Quantitative test for biotin and observations regarding its occurrence and properties. E. E. Snell, R. E. Eakin and R. J. Williams. J. Am. Chem. Soc. 62, 175-8 (1940).

Further studies on the vitamin B₁ and B₂ content of wood sugar dry yeast. A. Scheunert and K. H. Wagner. Biochem. Z. 303, 329-34 (1940).

Distribution of pantothenic acid in certain products of natural origin. T. H. Jukes. J. Nutrition 21, 193-200 (1941).

The vitamin B₁ content of various yeasts and method of increasing it. H. Fink and F. Just. Biochem. Z. 308, 15-28 (1941); II. H. Fink, F. Just, A. Scheunert and K. H. Wagner. Ibid. 309, 1-12 (1941); V. The vitamin B₁ loss by growth of yeast in air. H. Fink and F. Just. Ibid. 311, 61-72 (1942); VI. Enrichment of the aneurine and co-carboxylase content of yeasts by addition of pyrimidine and thiazole components. Ibid. 287-306; VII. Testing different pyrimidine derivatives as suitable substrates for the biosynthesis of aneurine and cocarboxylase. Ibid. 313, 39-47 (1942); VIII. The biosynthesis of B₁ and cocarboxylase by means of microorganisms. H. Fink, F. Just and A. Hock. Ber. 75B, 2101-10 (1942).

Functions and properties of vitamins in waste brewers' yeast.
R. V. Siebel, P. J. F. Weber and E. Singruen. Modern Brewery
Age 26, No. 5, 44-8 (1941).

The vitamin B₁ content of different yeasts and its variations. III.
The reaction of beer and bakers' yeast to added aneurine. H.
Fink and F. Just. Biochem. Z. 309, 212-23 (1941).

Vitamin B₁ content of different yeasts. IV. The relation of the
enrichment effect to duration and temperature of the fermentation
as well as to the sugar and electrolyte concentration. H. Fink
F. Just. Biochem. Z. 309, 219-37 (1941).

The vitamin content of yeast grown on sulfite waste liquors and
their suitability as protein feeds. A. Scheunert. Biedermanns
Zentr., Abt B, (n.s.) 13, 329-40 (1941).

Vitamins in yeast. P. Karrer. Schweiz. Brau. Rundschau 52, 61-6
(1941); Chem. Abstr. 35, 8037 (1941).

Uptake of aneurine by bakers yeast. E. Sperber and S. Renvall.
Biochem. Z. 310, 160-9 (1941).

Vitamin D and other products of metabolism from yeast. Y.K.
Raghunatha Rao. Current Sci. 11, 189 (1942).

Distribution of nicotinic acid and nicotinamide in plant and
animal products. J. Abdoh and K. Taufel. Z. Untersuch. Lebensm.
84, 481-6 (1942).

The loss of vitamin B₂ from yeast during dissimilation. T. J. B.
Stier and C. F. MacIntyre. J. Cellular Comp. Physiol. 20, 385-92
(1942).

Vitamin B₁, riboflavin and nicotinic acid content of dried yeast.
M. Swaminathan. Indian J. Med. Res. 30, 403-7 (1942).

Vitamin B₁ linkage in fresh and dried yeast. A. Kuhn and H.
Gerhard. Vitamine Hormone 2, 21-6 (1942); Chem. Abstr. 37, 422
(1943).

Aneurine and bakers' yeast. II. E. Sperber. Biochem. Z. 313, 62-
74 (1942).

Vitamins of yeast. R. Jacquot. Presse med., Paris, 51 No. 6,
66-7 (1943).

Vitamin deficiencies in yeasts. P. R. Burkholder. *Am. J. Bot.* 30, 206-11 (1943).

Vitamin deficiencies of 50 yeasts and molds. P. R. Burkholder and D. Moyer. *Bull. Torrey Bot. Club* 70, 372-77 (1943).

The vitamin B₁ content of kefir yeast and kefir powder. M. Schulz and W. Werner. *Zentr. Bakt. Parasitenk., Abt. II*, 106, 28-31 (1943).

The vitamin B₆ conjugate in yeast. S. B. Binkley, O. D. Bird, E. S. Bloom, R. A. Brown, D. G. Calkins, C. J. Campbell, A. D. Emmett and J. J. Pfiffner. *Science (n.s.)* 100, 36-7 (1944).

Separation of Vitamins

The anti-neuritic bases of vegetable origin in relationship to beri-beri with a method of isolation of toruline the anti-neuritic base of yeast. E. S. Edie, W. H. Evans, B. Moore, G. C. E. Simpson and H. Webster. *Biochem. J.* 6, 234-42 (1912).

Studies on beri-beri. Further facts concerning the chemistry of the vitamin-fraction from yeast. C. Funk. *Brit. Med. J.* 1913, I, 814. (1913).

Fractionation of the phosphotungstic acid precipitate with acetone as a useful method for the preparation of the vitamin fraction from yeast. C. Funk. *Biochem. Bull.* 5, 1-16 (1916).

The value of yeast vitamin fraction as a supplement to a rice diet. A. D. Emmett and L. H. McKim. *J. Biol. Chem.* 32, 409-19 (1917).

A preliminary report on the preparation of anti-polyneuritic substances from carrots and yeast. K. Sugiura. *J. Biol. Chem.* 36, 191-6 (1918).

Extraction and concentration of the water-soluble vitamin from brewers' yeast. T. B. Osborne and A. J. Wakeman. *J. Biol. Chem.* 40, 383-94 (1919).

Methods of extracting and concentrating vitamin A, B, and C together with an apparatus for reducing milk, fruit juices, and other fluids to a powder without destruction of vitamins. J. F. McClendon. *J. Biol. Chem.* 47, 411-20 (1921).

Further experiments on the isolation of the antineuritic vitamin.
A. Seidell. J. Am. Chem. Soc. 44, 2042-51 (1922).

Extraction of vitamins from yeast and rice polishings with various water-miscible solvents. C. Funk, B. Harrow and J. B. Paton. J. Biol. Chem. 57, 163-62 (1923).

Separation of the antineuritic vitamin of yeast as picrate. G. Bertrand and A. Seidell. Bull. soc. chim. biol. 5, 794-6 (1923).

The chemistry of vitamins. A. Seidell. Science (n.s.) 60, 439-47 (1924).

Researches on vitamins. L. Marchlewski and Z. Wiewzchowski. Bull. soc. chim. biol. 6, 40-3 (1924).

Antineuritic yeast concentrates. I. H. W. Kinnersley and R. A. Peters. Biochem. J. 19, 820-6 (1925); II. The use of Norit in the concentration of torulin. Ibid. 21, 777-90 (1927); III. The curative pigeon test: A critic. H. W. Kinnersley, R. A. Peters, and V. Reader. Ibid. 22, 276-91 (1928); IV. The further purification of yeast vitamin B (curative). H. W. Kinnersley and R. A. Peters. Ibid. 419-33.

Concentration of the growth-promoting principle obtained from yeast (vitamin B). P. A. Levene and B. J. C. van der Hoeven. Science (n.s.) 62, 594 (1925).

The concentration of vitamin B. II. P. A. Levene and B. J. C. van der Hoeven. J. Biol. Chem. 65, 483-9 (1925).

Different extracts of yeast and their content of vitamin D compared with the initial proportion of vitamin in the fresh yeast. C. Funk and R. Lecoq. Compt. rend. soc. biol. 97, 440-2 (1927).

An attempt to separate vitamin B₂ from vitamin B in yeast and a comparison of its properties with those of the antineuritic vitamin B₁. H. Chick and M. H. Roscoe. Biochem. J. 23, 504-13 (1929).

Relation of hydrogen-ion concentration to the precipitation of purified torulin (yeast vitamin B) by phosphotungstic acid. H. W. Kinnersley and R. A. Peters. Biochem. J. 24, 1856-63 (1930).

Investigations of the preparation and behavior of vitamin B₁ concentrates from yeast. B. C. Guha. Biochem. J. 25, 931-44 (1931).

Further experimental differentiation of vitamins B and G. H. C. Sherman and M. R. Sandels. J. Nutrition 3, 395-409 (1931).

Manufacture of crystallized anti-beri-beri vitamin from yeast. R. Tschesche. Chem. Ztg. 56, 166-7 (1932).

The crystalline vitamin B₁ preparations obtained from yeast and rice bran. A. G. Van Veen. Z. physiol. Chem. 208, 125-8 (1932).

The preparation of crystalline antineuritic vitamin from yeast. Preliminary paper. A. Windaus, R. Tschesche, H. Ruhkopf, F. Laquer and F. Schultz. Z. physiol. Chem. 204, 123-8 (1932).

The extraction of the antineuritic vitamin (vitamin B₁) from dried brewers' yeast. A. Seidell. J. Biol. Chem. 100, 195-203 (1933).

The differential extraction from dried brewers' yeast of the antineuritic (vitamin B₁) and growth-promoting (vitamin B₂) vitamins and their biological standardization, with a note on the relation of hemin to vitamin B₂. M. I. Smith. J. Biol. Chem. 100, 225-35 (1933).

Crystalline preparations of vitamin B₁ from bakers' yeast. H. W. Kinnersley, J. R. O'Brien and R. A. Peters. Biochem. J. 27, 232-9 (1933).

Large-scale preparations of vitamin B₁ and vitamin B₄ concentrates. H. W. Kinnersley, J. R. O'Brien, R. A. Peters and V. Reader. Biochem. J. 27, 225-31 (1933).

Crystalline antineuritic vitamin (B₁) obtained with the aid of picrolonic acid. A. Seidell and M. I. Smith. J. Am. Chem. Soc. 55, 3380-3 (1933).

Extractability of vitamin G (B₂) from yeast by various acetone-water and methanol-water mixtures. P. L. Day. J. Am. Chem. Soc. 56, 452-4 (1934).

Isolation of oryzanin (antineuritic vitamin) from yeast. S. Ohdake. Proc. Imp. Acad. Tokyo, 10, 95-8 (1934).

Biological assay of vitamin B₁ prepared from brewers' yeast. K. Z. Tul'chinskaya and Z. B. Kusova. Proc. Inst. Sci. Res. Food Ind., Leningrad, 2, No. 2, 113-26 (1935).

Methods for preparing vitamin B₁ from brewers' yeast. D. Z. Tul'chinskaya. Proc. Inst. Sci. Res. Food Ind., Leningrad, 2, No. 2, 102-12 (1935).

Improved yields of vitamin B₁. H. W. Kinnersley, J. R. O'Brien and R. A. Peters. Biochem. J. 29, 716-17 (1935).

Oryzanin, antineuritic vitamin. IV. The activity and thermostability of oryzanin hydrochloride. S. Otake and T. Yamagishi. Bull. Agr. Chem. Soc. Japan 11, 51-61 (1935).

An effective method of extracting vitamin B₁. S. Itter, E. R. Orent and E. V. McCollum. J. Biol. Chem. 108, 571-7 (1935).

Preparation of a concentrate of vitamins B₁ and B₂ from brewers' yeast. M. I. Smith and A. Seidell. Pub. Health Repts. U. S. Pub. Health Serv. 51, 685-8 (1936).

Fractionation of the vitamin B₂ complex from various source materials. N. Halliday and H. M. Evans. J. Biol. Chem. 118, 255-67 (1937).

Use of synthetic zeolites in the isolation of vitamin B₁. II. Experiments with brewers' yeast. L. R. Cerecedo and F. J. Kaszuba. J. Am. Chem. Soc. 59, 1619-21 (1937).

Crystalline vitamin B₁ from natural sources. R. D. Greene and A. Black. J. Am. Chem. Soc. 59, 1395-9 (1937).

Vitamin studies. I. H. v. Euler, M. Malmberg, F. Schlenk and W. Gleim. Arkiv Kemi Mineral. Geol. 12B, No. 33, 8 pp. (1937).

The isolation of p-aminobenzoic acid from yeast. K. C. Blanchard. J. Biol. Chem. 140, 919-26 (1941).

Obtaining vitamin preparations from beer yeast. F. G. Covian. Ion, Madrid, 1, No. 2, 10-18 (1941); Chem. Abstr. 36, 3323 (1942).

Synthesis of Vitamins by Yeast

Synthesis of vitamin B by yeasts (preliminary note). A. Harden and S. S. Zilva. Biochem. J. 15, 438-9 (1921).

The synthesis of water-soluble B by yeast grown in solutions of purified nutrients. M. B. MacDonald. J. Biol. Chem. 54, 243-8 (1922).

Production of yeast vitamin in the laboratory for the cultivation of bacteria. A. P. Hitchens. Abstr. Bact. 6, Sci. Proc., 35 (1922).

Synthesis of vitamins by yeast. R. Zajdel and C. Funk. Compt. rend. soc. biol. 92, 1527-8 (1925).

Synthesis of antineuritic vitamin by yeast. G. L. Peskett. Biochem. J. 21, 1102-3 (1927).

Synthesis of the antineuritic factor (torulin) by yeast. F. Hawking. Biochem. J. 21, 728-31 (1927).

Comparative study of the elaboration of vitamin B by yeasts cultivated in extract of malt, cane molasses and beet molasses. L. Randoin and R. Lecoq. Compt. rend. soc. biol. 99, 47-9 (1928).

Yeast and vitamins B₁ and B₂. J. C. Drummond and J. M. Whitmarsh. J. Inst. Brewing 38, 264-72 (1932).

Synthesis of vitamin B₁ and B₂ (complex) by Torula utilis. A. Scheunert, K. H. Wagner, H. Fink and J. Krebs. Biochem. Z. 302, 1-11 (1939).

Nicotinic acid content of different feed yeast, beer and press yeast. Demonstration of total synthesis of nicotinic acid by Torula. H. Fink and F. Just. Biochem. Z. 303, 404-14 (1939).

The effect of ions in the formation of a vitamin (of the B group?) in yeast cells. D. L. Rubinshtein and L. A. Shekun. Biokhimiya 6, 434-9 (1941) (English summary).

Biosynthesis of vitamin B₁ by yeast. M. I. Livshits. Proc. Sci. Inst. Vitamin Res. U.S.S.R. 3, No. 1, 184-8 (1941).

The biological synthesis of pantothenic acid. T. Wieland and E. F. Moller. Z. physiol. Chem. 269, 227-35 (1941).

Vitamin synthesis by yeast converted from a heterotrophic to an autotrophic habit. L. H. Leonian and V. G. Lilly. Science (n.s.) 95, 658 (1942).

Synthesis of vitamin B₁ by yeast. J. M. Van Lanen, H. P. Broquist, M. J. Johnson, I. L. Baldwin and W. H. Peterson. Ind. Eng. Chem. 34, 1244-7 (1942).

A biological synthesis of pantothenic acid. II. Ammonium ion as activator. T. Wieland and E. F. Moller. Z. physiol. Chem. 272, 232-8 (1942).

Synthesis of riboflavin by yeast. P. R. Burkholder. Proc. Natl. Acad. Sci. U.S.A. 29, 166-72 (1943).

Synthesis of riboflavin by lactose-fermenting yeasts. M. Rogosa. J. Bact. 45, 459-60 (1943).

Washing of Yeast

A new substance for washing infected yeast. G. Thevenot. Am. Brewer, 42, 397-8 (1909).

Persulfate of ammonia for washing infected yeast. F. Schönfeld and M. Hardeck. Wochschr. Brau. 26, 621-2 (1909).

Washing yeast with phosphoric acid. P. Petit. Wochschr. Brau. 28, 19-20 (1911).

Washing of top fermentation yeasts. G. Lefrancq. Bull. assoc. élèves inst. sup. ferment. Gand 29, 136-45 (1928); Chem. Abstr. 22, 2235 (1928).

Notes on the washing of yeasts. R. van Daele. Bull. assoc. élèves inst. sup. ferment. Gand 29, 421-9 (1928); Chem. Abstr. 23, 1210 (1929).

The washing of yeasts (in the brewing industry). P. Petit. Brasserie et malterie 24, 17-21 (1934); Chem. Abstr. 28, 5174 (1934).

The changing of the biochemical properties of yeast by washing. G. Medvedev and A. Khomich. Planta 26, 303-10 (1936).

Can a yeast infected by Sarcina become Sarcina-free as a result of further cultivation? I Janensch. Wochschr. Brau. 53, 59-61 (1936).

Wood Sugar Solutions for Growing

Carbohydrates other than sugar (e.g. waste liquors from cellulose manufacture) which are suitable as yeast foods. T. Bokorny. Chem. Ztg. 42, 260 (1918).

Algae and kelp as nutrient for yeast in sulfite liquor fermentation. H. Landmark. Tids. Kemi 16, 113-18 (1919); Chem. Abstr. 13, 2277 (1919).

The possibility of utilizing Finnish sulfite waste liquor by means of yeast organisms. V. Krohn. Ann. Acad. Sci. Fennicae 423, No. 8, 3-147 (1926).

The production of yeast from sulfite waste liquor. E. Hagglund. Papier-Fabr. 28, 65-8 (1930).

Wood chips. III. The cultivation of yeast in waste liquors of sulfite cellulose process. O. Routala. Acta Chem. Fennica 4, 115-21 (1931) (English summary).

The economic production of sugar from wood. H. Claassen. Chem. Ztg. 56, 989-91 (1932).

Making bakers' yeast from sulfite liquor. L. N. Gurfein and V. Y. Chastukhin. Izvest. Tsentral. Nauch. Issledov. Inst. Pish. Vkusovoi Prom. 1932, No. 9, 35 pp (1932); Chem. Abstr. 28, 1412-3 (1934).

Food yeast and its preparation. H. Claassen. Chem. Ztg. 57, 653-4 (1933).

Yeast from wood sugar. H. Claassen. Centr. Zuckerind. 42, 612-13 (1934); Chem. Abstr. 28, 7060 (1934).

The value of wood sugar yeast as a feeding stuff. II. The starch value of wood sugar and dried beer yeasts. G. Fingerling, K. Schmidt, B. Hientzsch, P. Eisenkolbe, M. Just and F. Kretzschmann. Landw. Vers. Sta. 118, 287-342 (1934); Ibid. 263-86.

The economics of molasses as compared to wood sugar for the preparation of bakers' yeasts. H. Claassen. Deut. Zuckerind. 59, 283 (1934).

Economics of manufacturing alcohol and yeast from wood sugar. H. Claassen. Z. Wirtschaftsgruppe Zuckerind. 85, Tech. Tl., No. 1, 32-46 (1935).

Obtaining sugar, alcohol and feed yeast from wood as a raw material. H. Scholler. Chem. Ztg. 60, 293-6 (1936).

Yeast from wood. E. W. Eweson. Chem. Industries 38, 573-4 (1936).

The production of food yeast in wood-sugar solutions. I. H. Fink, R. Lechner and E. Heinisch. Biochem. Z. 278, 23-9 (1935); II. Ibid. 283, 71-82 (1935); III. The natural nitrogen content of wood sugar wort. H. Fink and R. Lechner. Ibid. 286, 83-90 (1936).

The highest possible practical yields of yeast from sugar solutions. H. Claassen. Z. Wirtschaftsgruppe Zuckerind. 86, Tech. Tl., 873-7 (1936).

Biological protein synthesis. H. Lüers and E. Morike. Z. Spiritusind. 59, 383-4, 386-7 (1936).

Sulfite fermentation under conditions of repeated utilization of yeast. V. S. Kurbatova and A. N. Shakin. Biokhimiya 1, 457-66 (1936).

The preparation of yeast fodder from sulfite waste liquor. H. Fink and R. Lechner. Angew. Chem. 49, 775-7 (1936).

Fermentation of sulfite waste liquors with the addition of molasses. R. Feniksova and R. Segal. Spirto-Vodochnaya Prom. 14, No. 10-11, 47-52 (1937); Chem. Abstr. 34, 4221 (1940).

Fermentability of the wood sugar worts of the Scholler-Tornesch process. H. Lüers, G. Fries, W. Huttinger, E. Morike, C. Enders, K. Karnbach and F. Wieninger. Z. Spiritusind. 60, 7-8 (1937).

Supplement to the paper on the cultivation of food yeast in wood sugar solutions: A study of the biological synthesis of protein. H. Fink, J. Krebs and R. Lechner. Biochem. Z. 290, 135-6 (1937).

Biochemistry of Torula utilis. I. Presence of dulcitol in xylose yeast. H. Fink and F. Just. Biochem. Z. 296, 306-14 (1938).

Important problems of the pulp industry. A. Foulon. Wochbl. Papierfabr. 69, Tech. Tl., 819-20 (1938).

Sweden and chemical technic. A. Bilberg. Svensk Papperstidn. 41, 274-5 (1938).

Wood as a raw material for the chemical industry. J. H. Frydlander. Rev. prod. chim. 41, 225-31 (1938).

The production of food from wood. B. DeAngelis. Chimica ind. agr. biol. 15, 208-10 (1939); Chem. Abstr. 35, 5693 (1941).

Recent results of biological protein synthesis. H. Fink. Congr. intern. tech. chim. ind. agr. (Budapest 1939) 6, Compt. rend., tome 2, 409-26 (1939); Chem. Abstr. 36, 3623 (1942).

Obtaining fodder yeast from sulfite liquor. H. Fink and R. Lechner. Z. Spiritusind. 62, 251-2 (1939).

Long-time feeding of rats with yeast grown on the sulfite waste from cellulose manufacture. E. Mangold, A. Columbus and H. Hock. Biedermanns Zentr., Abt. B, (n.s.) 11, 357-60 (1939).

Yeast from waste sulfite liquor. L. Campbell. Can. Chem. Process Inds. 24, 603-5 (1940).

Yeast for feedstuff from waste sulfite liquor. S. Jansen. Papir J. 28, 216-20 (1940); Chem. Abstr. 35, 3440 (1941).

The protein "schlempe" procedure and the vitamin B content of the protein "schlempe." H. Fink, H. Wentrup, R. Lechner, A. Scheunert and K. H. Wagner. Biochem. Z. 304, 318-25 (1940).

Changes in pH during the culture of yeast in sulfite liquors. P. Roine and J. Erkama. Suomen Kemistilehti 14B, 2-3 (1941)(in German); Chem. Abstr. 35, 4911 (1941).

Yeast growth substances in wood. C. Enders and M. Hegendorfer. Biochem. Z. 307, 120-8 (1941).

New methods for utilizing the hemicellulose and waste chemicals from the viscose staple fiber industry. E. Elod. Melliand Textilber. 22, 629 (1941).

The plant and research institute of the Phrix Corporation. H. Jentgen. Papier Fabr. 39, 257-62 (1941).

Utilization of yeast as a by-product in alcoholic fermentation of sulfite waste liquor. L. Broman. Finn. Pap. Timber J. 23, 182, 184, 186, 188, 190 (1941); Chem. Abstr. 36, 6798 (1942).

Technical investigations for the production of feed yeast from sulfite waste liquor of coniferous and deciduous wood. H. Fink, R. Lechner and R. Illig. Vorratspflege Lebensmittelforsch. 5, 100-25 (1942); Chem. Abstr. 37, 5501 (1943).

Feeding stuffs and other alimentary products from wood. E. Hagglund. Papier Ztg. 67, 97-9 (1942); Chem. Abstr. 37, 4151 (1943).

Manufacture of yeast for feeding purposes and human consumption from sulfite waste liquor and slops. S. O. Rosenqvist. Svensk Papperstidn. 45, 506-15 (1942)(English and German summaries).

Growing feed yeast, Monilia murmanica on the hydrolysis products of plant wastes. M. A. Shimanskiĭ. Chem. Abstr. 37, 2879 (1943).

Farm feed from wood. E. M. Schaefer. Feedstuffs 16, No. 15 18-21 (1944).

Yeast Gum

The behavior of yeast gum in autolysis and alcoholic fermentation. E. Salkowski. Z. physiol. Chem. 69, 466-71 (1911).

Contribution to the knowledge of yeast gum. H. v. Euler and A. Fodor. Z. physiol. Chem. 72, 339-46 (1911).

Yeast gum. E. Salkowski. Z. physiol. Chem. 73, 314-6 (1911).

Behavior of yeast gum in animal organism. F. Simon. Z. physiol. Chem. 77, 218-23 (1912).

Yeast gum. Y. Hashitani. Bull. Agr. Chem. Soc. Japan 3, 2-14 (1927); J. Inst. Brewing 33, 347-51 (1927).

The detection of yeast by the yeast-gum reaction in the presence of hydrolytic decomposition products of animal protein and animal organs. H. Kraut. Z. Untersuch. Lebensm. 54, 446-9 (1927).

Preparation of yeast gum by enzymic decomposition and the detection of a yeast gum splitting enzyme in yeast. H. Kraut, F. Eichhorn and H. Rubenbauer. Ber. 60B, 1644-8 (1927)

Yeast gum and the purification of high-molecular compounds by adsorption. H. Kraut and F. Eichhorn. Ber. 60B, 1639-43 (1927).

Yeast gum. F. Stockhausen and K. Silbereisen. Wochschr. Brau. 52, 145-7 (1935); II. Ibid. 257-9; III. Yeast gum in beer. Ibid., 393-7.

Zymase

The production of zymase from fresh brewery yeast through plasmolysis. P. Rinckleben. Chem. Ztg. 35, 1149-50 (1911).

The juice of the beer yeast. E. Kayser. Compt. rend. 152, 1279-80 (1911).

Extraction of zymase. A. v. Lebedev. Chem. Ztg. 36, 365 (1912); P. Rinckleben. Ibid. 365 (Reply to L.).

The characteristics of expressed yeast juice and zymase formation in yeast. E. Buchner and F. Klatte. Biochem. Z. 9, 415-35 (1912).

Correlation of the zymase and reductase of yeast. S. D. L'vov. Bull. acad. sci. Petrograd (6) 9, 1171-2002 (1915) (in Russian).

Zymase formation in yeast. I. F. Hayduck and H. Haen. Biochem. Z. 128, 568-605 (1922).

Preparation of active zymase extracts from top yeast. C. Neuberg and H. Lustig. Arch. Biochem. 1, 191-6 (1942).

The preparation of apozymase from bakers' yeast. W. M. Grovier. Science (n.s.) 100, 156 (1944).

SUBJECT INDEX

- Actinic and Roentgen rays, action of 1-5
Adhesives and plastics from 160-161
Aeration, effect of in growing 6-7, 161-164
Amino acids and other nitrogenous compounds, synthesis of 7-8
Amino acids, as growth promoters 8-9
Amylases of 9-11
Analytical, general 11-18
Anemias, effect on 18-19
Apparatus for production of 165-171
Autolysis of 19-21
- Baking, general 21-25, 171-172
Bakers' yeast 25-27
Beer yeast 27-34, 172-173
Bios 34-37
Books 37-40
Brewers' yeast (see Beer yeast)
- Cancer, effect on 40-42
Cane juice and molasses, as a medium for growing, 42-45, 196-198, 212-214
Carbohydrates in 49-51
Carbohydrate metabolism, effect on 45-47
Carboxylase in 51-52
Catalase of 48
Cattle feeding, yeast in 48-49
Chemicals, miscellaneous, effect of 52-61
Classification of 61-62
Composition of, general 63-67
Compressed 62-63, 173-175
Conditioning and improving of 176-177
Continuous addition process for growing 177-179
Coproporphyrin in 67-69
Cozymase of 69-71
Cultures, preparation of pure 71-72, 215
Cytochrome of 72-73
- Dehydrogenase of 73-74
Diet deficiencies, use of in 75-81
Distillers' slop, yeast from 179
Drying and dried 81-83, 180-184
- Effluents, purification of from yeast factories, 83-84, 219
Enzymes, general 84-93
Ergosterol (also see Sterols) 193-194, 267-269
Extracts 93-96, 184

- Factor Z of 96-97
Fat in 97-99
Feed, general 99-101, 185-192
Fermentation, general 102-112
Flocculation and granulation of 112-113
Food, general 113-117, 185-192

General 117-120
Glutathion in 120-121
Glycogen in 122-123
Growth and growth substances, general 123-131, 193,
Gum (See Yeast gum)

Halogens and halogenated compounds, effect of 131-133
Hides, treatment of 220
High temperature yeasts 133
Hogs, feeding of with yeast 134-136
Hormones, effect of 133-134
Horses, feeding of with yeast 137

Invertase of 137-140, 195
Irradiated 140-143

Magnetic field, action of 143-144
Maltase of 144
Metabolism of 145-148
Metals, effect of 149-151
Mitogenetic rays of 151-152
Molasses for growing (see Cane juice and molasses as a medium for
growing).
Nitrogen, determination of in 154-155
Nitrogenous constituents of 152-154
Nitrogenous nutrients for growing 155-160, 199-201
Nitrophenols, effect of 221
Nucleic acid of 222-224

Organic compounds, action on certain 224-229
Oxidation and reduction 230-232

Patents 160-220
Permeability of the cell 232-233
Phosphatases of 234
Phosphates, determination of in 235
Phosphates and phosphate complexes of 235-237
Physiology of, general 237-243

Pigmented yeasts 244
Plants, action on 244-245
Poultry, feeding of with 245-247
Preparations, general 203-205
Preservation of 202-203, 247
Pressuremeter studies of 248
Production of, general 206-212, 248-250
Protein, value of yeast 250-251
Proteolytic enzymes of 252-254
Pyruvic acid 254-256

Raw materials for growing, miscellaneous 256-258
Renal function, effect on 258-259
Respiration of 259-264
Roentgen rays (see Actinic and Roentgen rays)

Spectroscopy of 264
Staining of 265-266
Sterols 267-269
Stimulants for propagating 216-217
Sugars, assimilation of by 269-270
Sugars, fermentation of different by 270-272
Sulfite liquor for growing (See Wood sugar solutions for growing)
Surplus, utilization of 272-273
Therapeutic uses of, miscellaneous 217-219, 273-278
Theses 278-279
Trehalose in 279
Two stage process for growing 220
Types of 279-284
Uric acid, effect of yeast on excretion of 285
Utilization of, by human organism 285-286
Vitamins, as growth promoters for 286-288
Vitamins in 288-296
Vitamins, increasing content of 194-195
Vitamins, separation of from 296-299
Vitamins, synthesis of by 300-301

Washing of 301
Wood sugar solutions for growing 214-215, 302-305
Yeast gum 305-306

Zymase 306

PATENTS

Adhesives and plastics 160-161
Aeration process for growing 161-164
Apparatus for production 165-171

Baking 171-172
Beer yeast 172-173

Compressed 173-175
Conditioning and improving 176-177
Continuous addition process for growing 177-179

Distillers' slop 179
Drying and dried 180-184

Extracts 184

Feeds and food 185-192

Growth substances 193

Increasing ergosterol content 193-194
Increasing salts content 194
Increasing vitamin content 194-195
Invertase 195

Molasses for growing 196-198

Nitrogenous materials for propagation 199-201

Preserving 202-205
Preparations, general 203-205
Production, general 206-212
Production, from molasses 212-214
Production from sulfite liquor 214-215
Pure cultures 215

Stimulants for propagating 216-217

Therapeutic preparations 217-219
Treating hides 220
Treating yeast plant wastes 219
Two stage process for growing 220

Abstr. Bact.	Abstracts of Bacteriology. Baltimore. (Merged with Bot. Abstr. to become Biol. Abstr. in 1926).
Abstr. Inst. Phys. Chem. Res., Tokyo	Abstracts from the Bulletin of the Institute of Physical and Chemical Research. Tokyo. (Vols. 1, 2 under cover of Bulls.; cont'd under cover of Sci. Pap.) (In Eng., Ger., or Esperanto).
Acta Biol. Exptl., Warsaw	Acta Biologiae Experimentalis. Warsaw.
Acta Chem. Fennica	Acta Chemica Fennica; Suomen Kemistilehti. Helsingfors. (Latin name dropped with vol. 8, no. 2, 1935) (B in Ger. or Eng.)
Acta Intern. Union Cancer	Acta International Union against Cancer. Paris (In Eng., Fr., Ger., Ital., or Russ.)
Acta Path. Microbiol. Scand.	Acta Physiologica Scandinavica. Stockholm. (In Eng., Fr., or Ger.)
Acta Physiol. Scand.	Acta Physiologica Sandinavica. Stockholm. (In Eng., Fr., or Ger.)
Acta Phytochim., Tokyo	Acta Phytöchimica; Shokubutsu kwagaku zas shi. Tokyo
Acta Schol. Med. Univ. Imp. Kyoto	Acta Scholae Medicinalis Universitatis Imperialis in Kioto. Kyoto. (In Eng. or Ger.)
Agr. Expt. Sta. Univ. Tenn. Bull.	Agricultural Experiment Station of the University of Tennessee Bulletin. Knoxville
Akad. Wet. Amsterdam Versl. nat.	K. Akademie van Wetenschappen te Amsterdam Verslag van de gewone vergaderingen der afdeeling natuurkunde. (Title varies slightly)
Allg. Brauer-Hopfen-Ztg.	Allgemeine Brauer-und Hopfen-Zeitung. Nurnberg
Allg. Z. Bierbrau. Malz-fabr.	Allgemeine Zeitschrift für Bierbrauerei und Malzfabrikation. Vienna. (Discontinued in 1928)

Am. Brewer	American Brewer. New York
Am. Food J.	American Food Journal. New York (Discontinued in 1928)(Superseded by Home Economist and American Food Journal; superseded by Practical Home Economist)
Am. J. Bot.	American Journal of Botany. New York
Am. J. Cancer	American Journal of Cancer. Lancaster, Pa.
Am. J. Diseases Children	American Journal of Diseases of Children. Chicago
Am. J. Hyg.	American Journal of Hygiene. Baltimore
Am. J. Med. Sci.	American Journal of the Medical Sciences. Philadelphia
Am. J. Path.	American Journal of Pathology. Ann Arbor, Mich.
Am. J. Pharm.	American Journal of Pharmacy. Philadelphia
Am. J. Physiol.	American Journal of Physiology. Baltimore
Am. Med.	American Medicine. New York
Am. Nat.	American Naturalist. Lancaster, Pa.
Am. Rev. Tuberc.	American Review of Tuberculosis. New York
Am. Soc. Brewing Chemists Proc.	American Society of Brewing Chemists Proceedings
An. asoc. quim. argentina	Anales de la asociación química argentina. Buenos Aires
An. soc. españ. fis. quim.	Anales de la sociedad española de física y química. Madrid
Analyst	The Analyst. London
Angew. Bot.	Angewandte Botanik (subtitle varies). Berlin
Angew. Chem.	Angewandte Chemie. Berlin. (Superseding Z. angew. Chem.)(Superseded by Die Chemie in 1942)

Ann.	Justus Liebig's Annalen der Chemie. Berlin
Ann. Acad. Sci. Fennicae	Annales Academiae Scientiarum Fennicae (Suomalainen Tiedakatemia). Helsingfors. (In Ger. or Eng.)
Ann. Appl. Biol.	Annals of Applied Biology. London
Ann. Bot.	Annals of Botany. London
Ann. brasserie dist.	Annales de la brasserie et de la distillerie. Paris. (Superseded by Ann. Ferment. in 1935)
Ann. bull. soc. roy. sci. méd. nat. Bruxelles	Annales et bulletin de la société royale des sciences médicales et naturelles de Bruxelles
Ann. chim. applicata	Annali di chimica applicata. Rome. (From Mar. 1920 to Feb. 1923 as Giorn. chim. ind. applicata)
Ann. fals.	Annales des falsifications et des fraudes. Paris
Ann. ferment.	Annales des fermentations. Paris. (Superseding Ann. brasserie dist. in 1935)
Ann. igiene	Annali d'igiene (1895-1915 adding "sperimentale"). Rome
Ann. inst. nat. agron.	Annales de l'institut national agronomique. Paris. (Discontinued with vol. 30, 1938?)
Ann. inst. Pasteur	Annales de l'institut Pasteur. Paris
Ann. Mo. Bot. Garden	Annals of the Missouri Botanical Garden. St. Louis
Ann. physiol. physico-chim. biol.	Annales de physiologie et de physicochimie biologique. Paris
Ann. Rept. Dept. Agr. Bengal	Annual Report of the Department of Agriculture Bengal (Government of Bengal). Alipore, Bengal
Ann. Rept. Pa. Agr. Expt. Sta. Bull.	Annual Report of the Pennsylvania Agricultural Experiment Station... Bulletin. State College
Ann. Rept. Smiths. Inst.	Annual Report ... of the Smithsonian Institution ... Washington

- | | |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ann.Repts.Progress
Chem.London | Annual Report on the Progress of Chemistry
(The Chemical Society). London |
| Ann.Rev.Biochem. | Annual Review of Biochemistry. Stanford
University P. O., Calif. |
| Ann. univ. Lyon | Annales de l'université de Lyon. (Ser. 3,
Sciences; sec.B, Sciences physique et chimiques) |
| Ann. zymol. | Annales de zymologie. Brussels |
| Antonie van Leeuwenhoek | Antonie van Leeuwenhoek. Amsterdam. (Subtitle
varies). (Superseding Nederland. Tijdschr. Hyg.
Microbiol.Serol. in 1934)(In Eng.,Fr., or Ger.) |
| Apoth. Ztg. | Apotheker Zeitung. Berlin. (Superseded by
Deutsche Apotheker Zeitung) |
| Arb.kais.Gesundheitsamt | Arbeiten aus dem kaiserlichen Gesundheitsamte.
Berlin. (Beginning 1919 Arb. Reichsgesundheitsamt) |
| Arb. Reichsgesundheits-
amt | Arbeiten aus dem Reichsgesundheitsamte. Berlin |
| Arch.Anat.Physiol.,
physiol. | Archiv für Anatomie und Physiologie; Physio-
logische Abteilung. Leipsic. (Merged into
Pfluger's Arch. ges. Physiol. in 1919) |
| Arch. Biochem. | Archives of Biochemistry. New York |
| Arch.Chem.Farm.,
Warsaw | Archiwum Chemji i Farmacji; Archive de chimie
et de pharmacie (Dépt. de Chimie de l'Institut
d'Hygiène d'état). (In Polish, with translated
summaries) Warsaw |
| Arch. Chem. Mikrosk. | Archiv für Chemie und Mikroskopie. Vienna
(Discontinued in 1918) |
| Arch.Disease Childhood | Archives of Disease in Childhood. London |
| Arch.exptl.Path.
Pharmakol. | Archiv für experimentelle Pathologie und
Pharmakologie (Beginning with vol. 110, Dec. 1925,
as Naunyn-Schmiedeberg's Archiv für, etc.)
Berlin |

- Arch.exptl.Zellforsch. Archiv für experimentelle Zellforschung
Gewebezucht.. besonders Gewebezuchtung. Jena
- Arch.farmacol.sper. Archivio di farmacologia sperimentale e science
affini. Rome
- Arch.ges.Physiol. Archiv für die gesamte Physiologie des Menschen
und der Tiere. Bonn. (Beginning with vol. 132,
1910, as Pflüger's Arch. ges. Physiol.)
- Arch. Hyg. Archiv für Hygiene. Munich and Berlin. (Beginning
with vol.101,1929, as Arch. Hyg. Bakt.)
- Arch. Hyg. Bakt. Archiv für Hygiene und Bakteriologie. Munich
- Arch. Intern. Med. Archives of Internal Medicine. Chicago
- Arch.intern.pharmaco- Archives internationales de pharmacodynamie
dynamie et de thérapie. Ghent [and] Brussels. (In vari-
ous languages)
- Arch. intern. physiol. Archives internationales de physiologie.
Liege; Paris
- Arch. ital. biol. Archives italiennes de biologie. Pisa.
(Superseded by Nouvelles archives italiennes
de biologie; superseded by Revue des archives
italiennes de biologie in 1938)
- Arch. Mikrobiol. Archiv für Mikrobiologie. Berlin
- Arch. néerland.physiol. Archives néerlandaises de physiologie de
l'homme et des animaux. (Forms ser. 3 of
Archives néerlandaises des sciences exactes
et naturelles. Harlem) Amsterdam
- Arch. Pharm. Archiv der Pharmazie (Beginning with vol.262,
1924, Archiv der Pharmazie und Berichte der
deutschen pharmazeutischen Gesellschaft).Berlin
- Arch. phys. biol. Archives de physique biologique. Paris
- Arch. sci.biol., Archives des sciences biologiques; Arkhiv
Leningrad biologicheskikh Nauk. Leningrad. (Beginning
with vol. 22, Russian title only, viz. Arkh.
Biol. Nauk.)

Arch.sci.biol.,Naples	Archivio di scienze biologiche. Naples; Bologna
Arch.sci.phys.nat.	Archives des sciences physiques et naturelles; Bibliothèque Universelle. Geneva
Arch.Suikerind.Nederl. Nederl.Ind.	Archief voor de Suikerindustrie en Nederl.en Nederlandsch-Indie. Pasoeroean, Java; The Hague. (Superseding Archief voor de Suikerindustrie en Nederlandsch-Indie in 1940)
Arch. Tierernähr. Tierzucht	Archiv für Tierernährung und Tierzucht, Berlin. (Abt. B of Wissenschaftliches Archiv für Landwirtschaft)
Arhiv Hem.Farm.	Arhiv za Hemiju i Farmaciju. Zagreb, Jugoslavia. (In Jugoslavian with added Fr. and Ger. titles) (Superseded by Arhiv za Hemiju i tehnologiju)
Ark.Agr.Exptl.Sta. Bull.	University of Arkansas College of Agriculture, Agricultural Experiment Station Bulletin. Fayetteville
Arkh.Biol.Nauk	Arkhiv Biologicheskikh Nauk (Vsesoiūznyi institut eksperimental'noi meditsiny).Leningrad. (In Russian with Eng., Fr., or Ger. summaries) (For vols. 1-22 see Arch. sci. biol., Leningrad)
Arkiv Kemi Mineral. Geol.	Arkiv für Kemi, Mineralogi och Geologi. Stockholm. (In Eng., Fr., Ger. or Swed.)
Atti Congr. intern. panificazione	Atti del congresso internazionale di panificazione: International Technical Scientific Bread making Congress)(1st Congr. in Rome)
Atti Congr. naz. chim. ind.	Atti del congresso nazionale di chimica industriale (2nd Congr. in Milan)
Atti Congr. naz. chim. pura applicata	Atti del congresso nazionale de chimica pura ed applicata (Associazione italiana di chimica generale ed applicata. Rome)(2nd Congr. in Palermo)
Austral.J.Exptl. Biol.Med.Sci.	Australian Journal of Experimental Biology and Medical Science. Adelaide
Austral. J. Sci.	Australian Journal of Science. Sydney

Bact. Rev.	Bacteriological Reviews. Baltimore
Bakers' helper	Bakers' helper. Chicago
Beihefte bot.Centr.	Beihefte zum botanischen Centralblatt. Dresden. (Abt.1: Anatomie, Histologie, Morphologie und Physiologie der Pflanzen; superseded by Abt. A in 1934)
Beitr. Physiol.	Beiträge zur Physiologie. Berlin. (Discontinued 1934)
Ber.	Berichte der deutschen chemischen Gesellschaft. Berlin
Ber.bakt.-agron.Sta. Moskau	Berichte der bakteriologisch-agronomischen Station in Moskau; Vestnik Bakteriologo- Agronomicheskaja Stantsiia. Moscow (Ger. summaries)
Ber.deut.bot.Ges.	Berichte der deutschen botanischen Gesellschaft. Berlin
Ber.deut.pharm.Ges.	Berichte der deutschen pharmazeutischen Gesellschaft. Berlin (Combined with Arch. Pharm. in 1924)
Ber. ges. Physiol. exptl. Pharmakol.	Berichte "über die gesamte Physiologie und experimentelle Pharmakologie (beginning with vol.35, 1926, Ser.B of Berichte "über die gesamte Biologie). Berlin
Ber."Ohara Inst. landw. Forsch., Kurashiki	Berichte des "Ohara Instituts für land- wirtschaftliche Forschungen in Kurashiki, Provinz Okayama, Japan
Ber.schweiz.bot.Ges.	Berichte der schweizerischen botanischen Gesellschaft. Zurich
Ber.ungar.pharm.Ges.	Berichte der ungarischen pharmazeutischen Gesellschaft (Magyar Gyógyszerészstudományi Társaság Értesítője). Budapest. (In Hungarian with German summaries)
Biedermanns Zentr.	Biedermanns Zentralblatt für Agrikulturchemie und rationellen Landwirtschaftsbetrieb. Leipsic. (Beginning with vol.60, also called (n.s.) 1, 1931, in 2 Abteilungen; Abt.B: Tierernahrung)

Bienn.Rept.Agr.Expt. Sta.Okla. A.M.Coll.	Biennial Report Agricultural Experiment Station Oklahoma A. and M. College. Stillwater
Bimonthly Bull. Ohio Agr. Expt.Sta.	Bimonthly Bulletin Ohio Agricultural Experiment Station. Wooster
Biochem. Bull.	Biochemical Bulletin (Columbia University, Biochemical Association) New York. (Dis- continued 1916)
Biochem. J.	Biochemical Journal. London
Biochem. Z.	Biochemische Zeitschrift. Berlin
Biochim.terap.sper.	Biochimica e terapia sperimentale. Milan
Biodynamica	Biodynamica (Subtitle varies). Normandy, Mo.
Biokhimiya	Biokhimiya; Biochimia. Leningrad. (In Russian with Eng. or Ger. summaries)
Biol. Abstr.	Biological Abstracts. Menasha, Wis. (Formed by union of Abstr. Bact. and Botanical Abstracts in 1926)
Biol. Bull.	Biological Bulletin. Lancaster, Pa. (Super- seding Biol.Bull.Marine Biol.Lab.)
Biol. Bull. Marine Biol. Lab.	Biological Bulletin of the Marine Biological Laboratory. Woods Hole, Mass. (Superseded by Biol. Bull. in 1930)
Biol. Revs. Cambridge Phil. Soc.	Biological Reviews of the Cambridge Philo- sophical Society. London. (In Eng., Fr., or Ger.)
Biol. Zentr.	Biologisches Zentralblatt. Leipsic
Biol. Zhur.	Biologicheskii zhurnal; Journal de biologie (Gosudarstvennoe biologicheskoe i meditsinskoe izdatel'stvoe. Moscow. (In various languages; Russian papers with Ger. summaries)
Bohm. Bierbrauer	Der. Bohmische Bierbrauer. Prague. (Discontinued Dec. 1938)
Bol. ind.com.trabajo, Mexico	Boletin de industria, comercio y trabajo (Secretaria de industria, comercio y trabajo). Mexico, D.F. (Discontinued 1920)

Boll.ist.sieroterap. milan.	Bollettino dell'istituto sieroterapico milanese. Milan
Boll. sez. ital.Soc. intern. microbiol.	Bollettino della sezione italiana Società internazionale di microbiologia. Milan
Boll.soc.biol.sper.	Bollettino della società di biologia sperimentale. Naples. (Superseded by Boll.soc.ital.biol.sper.)
Boll.soc.ital.biol. sper.	Bollettino della società italiana di biologia sperimentale. Naples. (Vol.1, 1925-6, as Boll. soc. biol. sper.)
Boll. soc. med. chirurg.	Bollettino della società medico-chirurgica di Pavia
Boll.staz.patol. vegetale	Bollettino della r. stazione di patologia vegetale. Rome. (Title varies slightly)
Brasserie et malterie	Brasserie et malterie. Nancy. (Superseded by Brasseur franç.)
Brasseur franç.	Brasseur français. Paris
Brau-Malzind.	Brau- und Malzindustrie. Vienna
Brauer- Hopfen-Ztg.	Brau- und Hopfen-Zeitung "Gambrinus". Vienna
Braunkohle	Braunkohle. Halle a.S.
Brennerei Ztg.	Brennerei-Zeitung (Fachgruppe Kornbrennereien der Wirtschaftsgruppe-industrie). Berlin
Brewer and Malster	Brewer and malster and beverageur; A monthly journal of the brewing, malt, hop, barley and beverage trades. Chicago (Discontinued in 1937)
Brewers Digest	Brewers Digest. Beloit, Mich. (Continues in part Siebel Technical Review in 1937 and assumes its numbering)
Brewers J., London	Brewers' Journal and hop and malt trades review. London
Brewery Age	Brewery Age. Chicago (United with Modern Brewer in Feb. 1940 to form Modern Brewery Age)
Brit.Med.J.	British Medical Journal. London

- Brodil'naya Prom. Brodil'naya Promyshlennost (Fermentation Industry). Moscow (Superseded by Spirtovaya Prom.; superseded by Spirto-Vodochnaya Prom.; merged into Pishchevaya Prom.)
- Bul.Fac.Stiinte Cernăuți Buletinul Facultății de Stiinte din Cernăuți. Universitatea, Cernăuți, Roumania
- Bull.acad.roy.méd. Belg. Bulletin de l'académie royale de médecine de Belgique. Brussels
- Bull.acad.sci., Petrograd Bulletin de l'académie impériale des sciences, Petrograd (Beginning in 1922 Leningrad). (Superseded by Bulletin de l'académie des sciences de Russie; superseded by Bull.acad. sci.URSS, later divided into classes)
- Bull.acad.sci.Urss. math.nat. Bulletin de l'académie des sciences de l'URSS, Classe des sciences mathématiques et naturelles. Leningrad.
- Bull. Agr. Chem.Soc. Japan Bulletin of the Agricultural Chemical Society of Japan. Tokyo. (In Japanese; abstracts in English)(Beginning in 1935 under cover of the society's journal)
- Bull.Agr.Exptl.Sta. Univ.Wis. Bulletin ... Annual Report to the Director. Agricultural Experiment Station University of Wisconsin, Madison
- Bull.Agr.Res.Inst. Pusa Bulletin Agricultural Research Institute Pusa (Govt. of India).(Beginning in 1930 Bulletin Imperial Institute of Agricultural Research Pusa) Calcutta; New Delhi
- Bull.Appl.Bot.Genet. Plant Breeding, Leningrad Bulletin of Applied Botany, of Genetics and Plant Breeding; Trudy po prikladnoi botanike, genetike i selektsii (Vsesoiuznyi Institut prikladnoi botaniki i novykh kul'tur; Institut rasteniievodstva. Leningrad. (In Russian, with Eng. summaries)
- Bull.assoc.chim. Bulletin de l'association des chimistes. Paris (Superseding Bull. assoc. chim. suc. dist.)

- | | |
|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bull.assoc.chim.
sucr. dist. | Bulletin de l'association des chimistes de sucrierie, de distillerie et des industries agricoles de France et des colonies. Paris. (Title varies slightly)(Superseded by Bull. assoc. chim) |
| Bull.assoc.élèves
inst.sup. ferment.
Gand | Bulletin de l'association des anciens élèves de l'institut supérieur des fermentations de Gand. Ghent. (Superseded by Fermentatio; discontinued in 1938) |
| Bull.assoc.etud.
école sup. brasserie
univ. Louvain | Bulletin de l'association des anciens étudiants de l'école supérieure de brasserie de l'université de Louvain. Louvain. (Superseding Bull.trimest. assoc. élèves école sup. brasserie univ. Louvain in 1930) |
| Bull.biol.med. exptl.
URSS | Bulletin de biologie et de médecine expérimentale de l'URSS. (French edition of Byulleten Eksperimental'noi Biologii i Meditsiny). Moscow. (In Eng., Fr., Ger., or Ital.) |
| Bull.Chem.Soc.Japan | Bulletin of the Chemical Society of Japan. Tokyo. (In Eng., Fr., Ger., or Japanese) |
| Bull.Cornell Univ.
Agr.Expt.Sta. | Bulletin ... Cornell University Agricultural Experiment Station. Ithaca |
| Bull.inst.agron.sta.
rech. Gembloux | Bulletin de l'institut agronomique et des stations de recherches de Gembloux (Institut agronomique de l'état). Gembloux, Belgium |
| Bull.Inst.Phys.Chem.
Res., Tokyo | Bulletin of the Institute of Physical and Chemical Research (Rikwagaku-kenkyū-jo Iho) Tokyo. (In Japanese; abstracts in Eng., Fr. Ger., or Esperanto) |
| Bull.Inst.Sci.Less-
haft, Leningrad | Bulletin de l'Institut Scientifique Lesshaft (Leningradskū nauchnyi institut imeni P. F. Lesgafta). Leningrad. (Papers in Russian, résumés in French) |
| Bull.Johns Hopkins
Hosp. | Bulletin of the Johns Hopkins Hospital. Baltimore |
| Bull. Ohio Agr. Expt.
Sta. | Bulletin Ohio Agricultural Experiment Station. Wooster |

- Bull.orto bot.univ. Napolì Bullettino dell'orto botanico della r. università di Napoli. Naples
- Bull.School Agr.Forest. Taihoku Imp. Univ. Bulletin of the School of Agriculture and Forestry Taihoku Imperial University. Taihoku, Formosa. (In Jap., Eng., or Ger.; Japanese papers with Eng. or Ger. summaries)
- Bull. sci.pharmacol. Bulletin des sciences pharmacologiques. Paris
- Bull.sec.sci.acad. roumaine Bulletin de la section scientifique de l'academie roumaine. Bucharest. (In Fr. or Ger.)
- Bull. soc. chim. Bulletin de la société chimique de France. Paris
- Bull. soc. chim. Belg. Bulletin de la société chimique de Belgique et Recueil des travaux chimiques belges. Brussels
- Bull.soc.chim.biol. Bulletin de la société de chimie biologique. Paris
- Bull. soc. sci. hyg. aliment. Bulletin de la société scientifique d'hygiène alimentaire et d'alimentation rationnelle de l'homme. Paris
- Bull.Torrey Bot.Club Bulletin of the Torrey Botanical Club. New York
- Bull. trimest. assoc. élèves école sup. Bulletin trimestriel de l'association des anciens élèves de l'école supérieure de brasserie de l'université de Louvain. (Superseded by Bull.assoc.étud.école sup. brasserie univ.Louvain)
- Bull.Utsunomiya Agr. Coll. Bulletin of the Utsunomiya Agricultural College (Utsunomiya Kōtō-Nōrin Gakkō) Utsunomiya, Japan. (Mostly in Japanese; Eng., Fr., or Ger. summaries)
- Can.Chem.Met. Canadian Chemistry and Metallurgy. Toronto. (Superseded by Can. Chem.Process Inds. in 1938)
- Can.Chem.Process Inds. Canadian Chemistry and Process Industries. Toronto
- Can. J. Res. Canadian Journal of Research. Ottawa. (Beginning with vol.13, 1935, divided into 4 sections; sec. B, Chemical Sciences)

Cancer Res.	Cancer Research. (International Cancer Research Foundation). Baltimore
Carnegie Inst. Wash. Year Book	Carnegie Institution of Washington Year Book. Washington
Centr. Bakt. Parasitenk.	Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten. Leipsic. (Beginning 1929 Zentr. Bakt. Parasitenk., which see)
Centr. Zuckerind.	Centralblatt für die Zuckerindustrie (subtitle varies). Magdeburg
Cereal Chem.	Cereal Chemistry. St. Paul
Chem. Age, London	Chemical Age. London
Chem. Abstr.	Chemical Abstracts. Washington
Chem. Industries	Chemical Industries. New Haven (Superseding Chemical Markets in 1933)
Chem. Listy	Chemické Listy pro vědu a průmysl. Prague. (In Bohemian; titles also in French)
Chem. Met. Eng.	Chemical and Metallurgical Engineering. New York
Chem. News	Chemical News and Journal of Physical Science (Beginning 1921 "of Industrial Science"). London. (Discontinued in 1932)
Chem. Obzor	Chemický Obzor (subtitle varies). Prague. (In Bohemian, beginning with vol. 11, 1936) (Eng. summaries)
Chem. Products	Chemical Products and the Chemical News. London
Chem. Rev.	Chemical Reviews. Baltimore
Chem.-tech. Rundschau	Chemisch-technische Rundschau (subtitle varies) Berlin. (Discontinued in 1932)
Chem. Umschau	Chemische Umschau. Stuttgart. (Superseded by Fettchem. Umschau; superseded by Fette und Seifen)

Chem. Weekblad	Chemisch Weekblad. Amsterdam
Chem. Zelle Gewebe	Chemie der Zelle und Gewebe. Leipsic (Superseding Z.tech.Biol.)(Discontinued 1926)
Chem. Zentr.	Chemisches Zentralblatt. Berlin
Chem.. Ztg.	Chemiker-Zeitung (subtitle varies). Cothen, Anhalt.
Chemistry & Industry	Chemistry & Industry. London. (Under cover of J. Soc. Chem. Ind. with separate vol. nos.)
Chimica ind.agr.biol.	Chimica nell' industria, nell'agricoltura, nella biologia nelle realizzazioni autorarchiche e corporative. Rome. (Subtitle varies)
Chimie & industrie	Chimie & industrie. Paris
Chimie & industrie, Special No.	Chimie & industrie, Numéro Spécial. Compte rendu analytique du congrès de chimie industrielle. Paris. (Superseded by Congr. chim. ind. commun. in 1934)
Chronica Bot.	Chronica Botanica. (subtitle varies). Waltham, Mass. (In various languages)
Civil Eng.	Civil Engineering. New York
Clin. med. ital.	Clinica medica italiana. Milan
Cold Spring Harbor Symposia	Cold Spring Harbor Symposia on Quantitative Biology. Cold Spring Harbor, L.I., New York
Colloid J., Voronezh	Colloid Journal; Kolloidnyi Zhurnal. (Nauchno- Issledovatel'skii Institut Kolloidnoi Khimi). Voronezh
Colloid Symp. Monog.	Colloid Symposium Monograph. Baltimore. (Super- seded by Colloid Symposium Annual)
Colloides biol.clin. therap.	Colloides en biologie clinique et thérapeutique. Paris. (Discontinued in 1928)(Merged into Rev.gén.colloides; merged into J. chim. phys. in 1931)

Commun.Sci.Pract. Brew.	Communications on the Science and Practice of Brewing (Wallersteins Laboratorium). New York (Superseded by Wallerstein Labs. Commun. in 1939)
Compt. rend.	Comptes rendus hebdomadaires des séances de l'académie des sciences. Paris
Compr.rend.acad.agr. France	Comptes rendus hebdomadaires des séances de l'académie d'agriculture de France. Paris
Compt.rend.acad.sci. URSS	Comptes rendus de l'académie des sciences de l'URSS. Leningrad. (Ser.A, 1922-33, in Russian. New series, beginning 1933, in Ger., Fr., Eng., or in Russian with Ger., Fr., or Eng. summaries)
Compt.rend.soc.biol.	Comptes rendus des séances de la société de biologie et de ses filiales et associées. Paris
Compt.rend.soc.phys. hist.nat.Geneve	Comptes rendus des séances de la société de physique et d'histoire naturelle de Genève. (Beginning with vol. 35, 1918 as suppl. to Arch. sci. phys. nat.)
Compt.rend.trav.lab. Carlsberg	Comptes rendus des travaux du laboratoire Carlsberg. Copenhagen. (Beginning with vol. 21, 1935, in 2 ser., chimique et physiologique)
Congr.chim.ind. Commun.	Congrès de chimie industrielle Communications. Paris (Each vol. in 2 tomes; communications arranged alphabetically by authors)(Superseding Chimie & industrie, Special No. in 1934)
Congr.intern.tech. chim.ind.agr.	Congrès international technique et chimique des industries agricoles (4th congr.in Brussels) (6th congr. in Budapest)
Contrib.Boyce Thompson Inst.	Contributions from Boyce Thompson Institute. Yonkers
Cornell Vet.	Cornell Veterinarian. Ithaca
Current Sci.	Current Science. London-Calcutta-Bombay-Madras

Dept.Sci.Ind.Res. Rept.Food Invest.Bd.	Department of Scientific and Industrial Research. Report of the Food Investigation Board (Brit. Govt.). London
Deut. Essigind.	Deutsche Essigindustrie. Berlin
Deut.landw.Presse	Deutsche landwirtschaftliche Presse (Beginning with vol. 57, 1930, "vereinigt mit Illustrierte landwirtschaftliche Zeitung"). Berlin
Deut.landw.Tierz.	Deutsche landwirtschaftliche Tierzucht. Berlin
Deut.med.Wochschr.	Deutsche medizinische Wochenschrift. Leipsic
Deut.Zuckerind.	Deutsche Zuckerindustrie. Berlin
Drug Trade News	Drug Trade News. New York
Elektr.Sel'skogo Khoz.	Elektrifikatziya Sel'skogo Khozyaistva (Electrification of Agriculture)(Vsesoiuznyi institut mekhanizatsii i elektrifikatsii sel'skogo khoziaistva). Leningrad. (Beginning with vol.8, 1938; Mekhanizatsiia i elektrifikatsiia sotsialisticheskogo sel'skogo khoziaistva)
Endocrinology	Endocrinology. Los Angeles
Endokrinologie	Endokrinologie. Leipsic
Enzymologia	Enzymologia. The Hague. (In Eng., Fr., Ger., or Ital.)
Ergeb. Enzymforsch.	Ergebnisse der Enzymforschung. Leipsic
Ergeb. Physiol.	Ergebnisse der Physiologie. Leipsic. (Superseded by Ergebnisse der Physiologie und experimentellen Pharmakologie; superseded by Ergebnisse der Physiologie, biologischen Chemie und experimentellen Pharmakologie., Munich in 1935)
" Ernährung	" Ernährung. Leipsic
Expt.Sta.Rec.	Experiment Station Record (U.S. Dept. of Agriculture). Washington

Facts about Sugar	Facts about Sugar. New York (Absorbed Sugar, including Planter and Sugar Manufacturer, in 1930, and adopted that name in 1941)
Fed.Proc.Fed.Am. Socs.Exptl.Biol.	Federal Proceedings (Federation of American Societies for Experimental Biology). Baltimore
Feedstuffs	Feedstuffs. Minneapolis
Fermentatio	Fermentatio. Ghent. (Superseding Bull. Assoc. élèves inst. sup. ferment. Gand)
Fermentforsch.	Fermentforschung. Berlin
Fertilizer, Feeding Stuffs Farm Supplies J.	Fertilizer, Feeding Stuffs and Farm Supplies Journal. London. (Superseding Fertilizer and Feeding Stuffs Journal in 1924)
Festschr. E. C. Barell	Festschrift Herrn Emil Christoph Barell ... am 40. Jahrestage seiner Tätigkeit im Hause "Roche" überreicht ... Basel: 575 pp (1936)
Festskr.Orla-Jensen	Festkrift ... in honor of Prof. Dr. S. Orla-Jensen ... Odensee: "Det Danske Syrévaekker Laboratorium." 126 pp. (1931). (Text and translations in Dan., Ger., Fr., or Eng.)
Fettochem. Umschau	Fettochemische Umschau. Stuttgart. (Superseded by Fette u. Seifen. Berlin in 1936)
Finn.Pap.Timber J.	Finnish Paper and Timber Journal; Suomen paperi- ja Puutavaraalehti. Helsingfors
Flour and Feed	Flour and Feed (subtitle varies slightly). Milwaukee
Folia Endocrinol.Japon.	Folia Endocrinologica Japonica. Kyoto
Folia microbiol.	Folia microbiologica (subtitle varies). Delft. (In German)(Discontinued in 1919)
Folia Pharmacol. Japon.	Folia Pharmacologica Japonica. Kyoto. (Vol. 1 as Folia Japonica Pharmacologica)(In Ger.,Eng.; or in Japanese with Ger. or Eng. summaries)
Food	Food, Processing-Packing-Marketing. London. (Incorporating Canning and Food Trade Journal in 1935)
Food Industries	Food Industries. New York
Food Manuf.	Food Manufacture. London

Food Res.	Rood Research. Champaign. Ill.
Forschungsdienst	Forschungsdienst. Neudamm und Berlin. (Superseding Deutsche Landwirtschaftliche Rundschau in 1936)
Fruit Products J.	Fruit Products Journal and American Vinegar Industry. New York (Superseding American Vinegar Industry)
Fukuoka Ikwadaigaku Zasshi	Fukuoka Ikwadaigaku Zasshi; Fukuoka Acta Medica (Kyushu Imperial University. Faculty of Medicine). Fukuoka, Japan
Gann	Gann; the Japanese Journal of Cancer Research: Japanische Zeitschrift für Krebsforschung. Tokyo. (In Eng., Ger., or Japanese)
Gartenbauwiss.	Gartenbauwissenschaft. Berlin
Gazz. chim. ital.	Gazzetta chimica italiana. Rome
Giorn biol.apPLICATA ind. chim.	Giornale di biologia applicata alla industria chimica. Bologna. (Superseding Zymologia) (Superseded by Giorn.biol.ind.agr.aliment.)
Giorn.biol.ind.agr. aliment.	Giornale di biologia industriale, agraria ed alimentare. Bologna. (Superseded by Bollettino scientifico della facoltà di chimica industriale. Università Bologna in 1940)
Giorn.chim.ind. applicata	Giornale di chimica industriale ed applicata. Milano (Superseded by La Chimica e l'Industria in 1935)
Giorn.risicoltura	Giornale di Ricoltura. Vergelli, Italy. (Superseded by Ricoltura in 1939)
Glas.Srpske Kral'evska Akad., Belgrade	Glasnik Srpske Kral'evska Akademija (Bulletin of the Royal Servian Academy). Belgrade
Golden Sea Res.Inst. Chem.Bull.	Golden Sea Research Institute of Chemistry. Tanghu. nr.Tientsin. Hopei, China
Hadar	Hadar. Tel-Aviv. (In Hebrew and Eng.)
Handb. biochem.Arb.-Methoden	Handbuch der biochemischen Arbeitsmethoden. Abt. IV. Teil 1. Methoden der Fermentforschung. Teil 8. Erste Hälfte. Nahrungs- und Genussmittel. Berlin

Helv.Chim.Acta	Helvetica Chimica Acta. Basel and Geneva (In Fr., Ger., or Ital.)
Hereditas	Hereditas. Lund: (In Eng., Fr., or Ger.)
Hilgardia	Hilgardia. Berkeley
Hvalrad. Skrift.	Hvalradste Skrifter. (Norske Videnskaps- Akademi). Oslo
Ind.Eng.Chem.	Industrial and Engineering Chemistry (Continued with vol. 25, 1933, as Industrial and Engineer- ing Chemistry. Industrial Edition). Washington
Ind.Eng.Chem., Anal. Ed.	Industrial and Engineering Chemistry. Analytical Edition. Washington
Ind.ital.conserve aliment..	Industria italiana delle conserve alimentari. Parma
Ind. sacchar. ital.	Industria saccharifera italiana. Genoa and Ferrara
Indian J. Med. Res.	Indian Journal of Medical Research. Calcutta
Indian Med. Gaz.	Indian Medical Gazette. Calcutta
Indian Sugar	Indian Sugar (Indian Sugar Syndicate, Ltd.) Cawnpore
Industria chimica	Industria chimica. Rome. (Merged with Giorn. chim. ind. applicata in 1935 to form La Chimica e l'Industria. Milan)
Industria y quim.	Industria y quimica. Buenos Aires
Inst. Sewage Purif. J. Proc.	Institute of Sewage Purification Journal and Proceedings. London
Intern.Congr.Micro- biol. Rept. Proc.	International Congress for Microbiology Report of Proceedings. (3rd. congr. in New York)
Intern.Milchwirtsch. Kongr.	Internationaler Milchwirtschafts-Kongress. 1. Sektion. Milchviehzucht und Milchproduktion. Vorträge. Deutsche Ausgabe.. (9th congr. in Copenhagen)(11th congr. as Milchwirtschaft. Weltkongress)

- | | |
|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Intern.Rev. Sci. •
Practice Agr. | International Review of the Science and Practice of Agriculture. Rome. (Superseding Mo. Bull.Agr.Intell.)(Superseded by International Review of agriculture; discontinued 1928) |
| Intern. Sugar J. | International Sugar Journal. London |
| Ion, Madrid | Ion; Revista española de química aplicada. Madrid |
| Iowa State Coll. J.
Sci. | Iowa State College Journal of Science.
Ames |
| Izvest.Tsentral.Nauch.-
Issledov.Biokhim.Inst.
Pish.Vkusovoi Prom.SSSR | Izvestiya Tsentral'nogo Nauchno-Issledovatel'skogo Biokhimicheskogo Instituta Pishchevoi i Vkusovoi Promyshlennosti Narkomsnaba SSSR (Bulletin of the Central Scientific Research Institute for Biochemistry of the Food Industry Peoples Commissariat of Supply USSR). Moscow. (Superseding Izvest.Tsentral.Nauch.-Issledov. Inst.Pish. Vkusovoi Prom. SSSR) |
| Izvest.Tsentral.Nauch.
Issledov.Inst.Pish.
Vkusovoi Prom. SSSR | Izvestiya Tsentral'nogo Nauchno-Issledovatel'skogo Instituta Pishchevoi i Vkusovoi Promyshlennosti Narkomsnaba SSSR; Berichte des zentralen biochemischen Forschungsinstituts der Nahrungs- und Genussmittel Industrie. Moscow. (Beginning with vol. 1932, no. 1, Izvest. Tsentral.Nauch.Issledov.Biokh.Inst.Pish. Vkusovoi Prom. SSSR) |
| J. Agr.Chem.Soc.Japan | Journal of the Agricultural Chemical Society of Japan. Tokyo. (In Japanese, abstracts in Eng.) |
| J. Agr. Res. | Journal of Agricultural Research. Washington |
| J. Agr. Sci. | Journal of Agricultural Science. London |
| J.Am.Chem.Soc. | Journal of the American Chemical Society. Washington |
| J.Am.Dietetic Assoc. | Journal of the American Dietetic Association. Baltimore |
| J. Am. Med. Assoc. | Journal of the American Medical Association. Chicago |
| J. Am. Pharm. Assoc. | Journal of the American Pharmaceutical Association. Washington |

- J. Appl. Chem., Leningrad Journal of Applied Chemistry; Zhurnal prikladnoi khimi (Ser. B of Khimicheskii Zhurnal). Leningrad
- J. Assoc. Official Agr. Chem. Journal of the Association of Official Agricultural Chemists. Washington
- J. Bact. Journal of Bacteriology. Baltimore
- J. Biochem., Tokyo Journal of Biochemistry. Tokyo. (In Eng., Fr., or Ger.)
- J. Biol. Chem. Journal of Biological Chemistry, Baltimore
- J. Cellular Comp. Physiol. Journal of Cellular and Comparative Physiology. Philadelphia
- J. Chem. Eng. China Journal of Chemical Engineering, China. Tientsin. (In Chinese, Eng., or Ger.)
- J. Chem. Soc. Journal of the Chemical Society. London. (Vols. 33-128, 1878-1925, in 2 parts, Trans. and Abstr.; for later abstracts see British Chemical Abstracts)
- J. Chem. Soc. Japan Journal of the Chemical Society of Japan (Nippon Kwagaku Kwaishi). Tokyo. (In Japanese; beginning with vol. 50, 1929, Table of Contents in Eng.)
- J. chim. phys. Journal de chimie physique. Paris. (Superseded by Journal de chimie physique et de physico-chimie biologique in 1939)
- J. Clin. Invest. Journal of Clinical Investigations. Baltimore
- J. Coll. Agr. Imp. Univ. Tokyo Journal of the College of Agriculture. Imperial University of Tokyo. (Title varies slightly) (In Eng. or Ger.)
- J. Coll. Sci. Imp. Univ. Tokyo Journal of the College of Science, Imperial University of Tokyo. (Discontinued with vol. 45, 1925) (Superseded by Journal of the Faculty of Science, etc.)
- J. Comp. Path. Therap. Journal of Comparative Pathology and Therapeutics. Croyden, England

J. Dairy Res.	Journal of Dairy Research. London
J. Dairy Sci.	Journal of Dairy Science. Lancaster, Pa.
J. Econ. Entomol.	Journal of Economic Entomology. Menasha, Wis.
J. Exptl. Biol.	Journal of Experimental Biology. London
J. Exptl. Med.	Journal of Experimental Medicine. New York
J. Faculty Agr. Hokkaido Imp. Univ.	Journal of the Faculty of Agriculture, Hokkaido Imperial University. Sapporo, Japan
J. Faculty Eng. Tokyo Imp. Univ.	Journal of the Faculty of Engineering, Tokyo Imperial University. (Superseding Journal of the College of Engineering, etc.)(In Eng. or Ger.)
J. Franklin Inst.	Journal of the Franklin Institute. Philadelphia
J. Gen. Physiol.	Journal of General Physiology. Baltimore
J. Home Econ.	Journal of Home Economics. Washington. (Superseding Am. Food J.; superseded by Practical Home Economist)
J. Hyg.	Journal of Hygiene. London
J. Immunol.	Journal of Immunology. Baltimore
J. Inc. Brewers' Guild	Journal of the Incorporated Brewers' Guild. Chancery Lane, London E.C. 4
J. Ind. Eng. Chem.	Journal of Industrial and Engineering Chemistry. Washington. (Superseded by Ind. Eng. Chem. in 1923)
J. Indian Inst. Sci.	Journal of the Indian Institute of Science. Bangalore. (Superseded by Quarterly Journal, etc. in 1938)
J. Infectious Diseases	Journal of Infectious Diseases. Chicago
J. Inst. Brewing	Journal of the Institute of Brewing. London
J. Lab. Clin. Med.	Journal of Laboratory and Clinical Medicine. St. Louis, Mo.
J. Metab. Res.	Journal of Metabolic Research. Morristown, N.J. (Discontinued in 1926)

J.Mich.State Med. Soc.	Journal of the Michigan State Medical Society. Detroit
J. Microbiol., Kiev	Journal de Microbiologie; Mikrobiologichnii Zhurnal (Akademiia nauk URSR Institut mikrobiologii i epidemiologii). Kiev
J. Microbiol., Petro-grad	Journal de microbiologie; Zeitschrift für Mikrobiologie; Zhurnal mikrobiologii. Leningrad (Discontinued in 1919)
J. Nutrition	Journal of Nutrition. Philadelphia
J. Path. Bact.	Journal of Pathology and Bacteriology. Edinburgh
J. pharm. Belg.	Journal de pharmacie de Belgique (Fédération des unions et des oeuvres pharmaceutiques belges). Brussels
J. pharm. chim.	Journal de pharmacie et de chimie. Paris
J.Pharm.Soc.Japan	Journal of the Pharmaceutical Society of Japan; Yakugaku zasshi. Tokyo. (In Japanese with Ger. or Eng. summaries)
J. Pharmacol.	Journal of Pharmacology and Experimental Therapeutics. Baltimore
J.Philippine Is.Med. Assoc.	Journal of the Philippine Islands Medical Association. Manila. (Beginning 1940 "Islands" is dropped)
J. Phys. Chem.	Journal of Physical Chemistry. Baltimore
J. Physiol.	Journal of Physiology. London
J. physiol.path.gén.	Journal de physiologie et pathologie générale. Paris
J. prakt.Chem.	Journal für praktische Chemie. Leipsic
J.Res.Natl.Bur. Standards	Journal of Research of the National Bureau of Standards. Washington
J.Roy.Hort.Soc.	Journal of the Royal Horticultural Society. London

- J. Russ. Bot. Congr.,
Petrograd Journal of Russian Botanical Congress;
Dnevnik Vserossiiskii s'ezd russkikh
botanikov. (1st Congr. in Leningrad) (In
Russian) (Title varies from later congresses)
- J. Russ. Phys.-Chem.
Soc. Journal of the Russian Physico-Chemical Society;
Zhurnal Russkogo Fisiko-Khimicheskogo
Obshchestva. Moscow. (Beginning with vol. 63,
1931, the chemical part is continued as Zhurnal
Obshchei Khimii, vol. 1 (63))
- J. S.C. Med. Assoc. Journal of the South Carolina Medical Association.
Greenville
- J. Sci. Agr. Soc., Tokyo Journal of the Scientific Agricultural Society;
Nōgaku Kwai Hō. Komaba, Tokyo, Japan. (In
Japanese, t.-p. in Eng.) (Discontinued in 1931)
- J. Sci. Ind. Res., Delhi Journal of Scientific and Industrial Research
(Council of scientific and industrial research).
Delhi
- J. Sci. Tech., Cawnpore Journal of Science and Technology. Cawnpore,
India
- J. soc. bot. Russie Journal de la société botanique de Russie
(Russkoe botanicheskoe obshchestvo). Leningrad.
(Superseded by Journal botanique de l'URSS;
Botanicheskii zhurnal URSS in 1932)
- J. Soc. Chem. Ind. Journal of the Society of Chemical Industry.
London. (Beginning with vol. 37, 1918, in 2
sections, Transactions and abstracts)
- J. Soc. Chem. Ind.
Japan Journal of the Society of Chemical Industry of
Japan; Kōgyō Kwagaku zasshi (Nippon kwagaku
kwai). Tokyo. (In Japanese; suppl. bindings con-
tain abridged translations in Eng., Fr., or
Ger.)
- J. Tenn. Acad. Sci. Journal of the Tennessee Academy of Science.
Nashville

- | | |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Jahrb.Ver.Spiritus-fabr.Deutschland | Jahrbuch des Vereins der Spiritusfabrikanten in Deutschland, etc. Berlin. (Suppl. to Zeitschrift für Spiritusfabrikation)(Discontinued in 1914) |
| Jahrb.wiss.Bot. | Jahrbücher für wissenschaftliche Botanik. Berlin |
| Japan J.Dermatol. Urol. | Japanese Journal of Dermatology and Urology. Tokyo. (In Japanese with Ger., Fr., or Eng. summaries) |
| Japan.J.Gastroenterol. | Japanese Journal of Gastroenterology. Kyoto |
| Japan.J.Med.Sci., IV Pharmacol. | Japanese Journal of Medical Sciences. IV. Pharmacology. Tokyo. (In Eng., Fr., or Ger.) |
| Japan. Z. Mikrobiol. Path. | Japanische Zeitschrift für Mikrobiologie und Pathologie; Nippon Biseubutsugaku byorigaku zasshi (Bacteriological Institute, Kyoto Imperial University). Kyoto |
| Khlebopekarnaya Prom. | Khlebopekarnaya Promyshlennost (Bakery Industry)(Vsesoyuznyi Nauchno-Issledovatel'skiy Institut Khlebopekarnoy Promyshlennosti). Moscow |
| Kísérletügyi Közlemények | Kísérletügyi Közlemények...; Reports of the Hungarian agricultural experiment stations. Budapest. (In Hung.; t.-p and table of contents in Hung., Fr., Ger., and Eng.) |
| Kleine Mitt.Ver.Wasser,-Boden-Lufthyg. | Kleine Mitteilungen des Vereins für Wasser-, Boden- und Lufthygiene. Berlin-Dahlem |
| Klin.Wochschr. | Klinische Wochenschrift. Berlin |
| Kolloid Z. | Kolloid-Zeitschrift (Subtitle varies). Leipsic and Dresden |
| Kulturtechniker | Kulturtechniker (Subtitle varies)(Deutsche Kulturtechnische Gesellschaft). Berlin |
| Kungl.Lantbruksakad. Tid. | Kungl.Lantbruksakademiens Tidskrift. (Title also in Ger., Fr. and Eng.). Stockholm.. (Superseding Kungl.Landtbruks-Akademiens Handlingar och Tidskrift in 1939)(Most papers have Ger. or Eng. summaries) |

La Nature	See Nature, Paris
La. Planter Sugar Mfr.	Louisiana Planter and Sugar Manufacturer (Subtitle varies). New Orleans. (Superseded by Planter Sugar Mfr.; merged into Sugar. New York)
Lancet	Lancet. London
Landw. Jahrb.	Landwirtschaftliche Jahrbücher. Berlin (Supplements contain Berichte)
Landw. Jahrb. Baiern	Landwirtschaftliches Jahrbuch für Baiern. Munich. (Discontinued in 1934)
Landw. Jahrb. Schweiz	Landwirtschaftliches Jahrbuch der Schweiz. Berne
Landw. Vers. Sta.	Die Landwirtschaftlichen Versuchs-Stationen. Berlin. (Superseded by Z. Tierernähr. Futtermittelk. in 1938)
Landw. Wochschr. Prov. Sachsen	Landwirtschaftliche Wochenschrift für die Provinz Sachsen. Halle a.S. (Superseded by Landwirtschaftliche Wochenschrift, Amtsblatt Sachsen-Anhalt in 1935)
Lesokhim. Prom.	Lesokhimicheskaya Promyshlennost; nauchno-tekhnicheskii zhurnal. Moscow.
Macdonald Coll., McGill Univ. Tech. Bull.	Macdonald College, McGill University Technical Bulletin. Quebec
Magyar Chem. Folyóirat	Magyar Chemiai Folyóirat. Budapest. (In Hungarian with German summaries)
Magyar Orvosi Arch.	Magyar Orvosi Archivum (Hungarian Medical Archiv) (Beginning with vol. (n.s.) 1, 1900, as Orvostudományi értekezések gyűjteménye; Magyar Orvosi Archivum). Budapest
Med. u. Chem. Abh. med. chem. Forsch. I. G. Farbenind.	Medizin und Chemie Abhandlungen aus den medizinisch-chemischen Forschungsstätten der I. G. Farbenindustrie Aktien-Gesellschaft (I. G. Farbenindustrie A. G.). Leverkusen a. Rh.
Méd. exptl.	Médecine expérimentale; Eksperimental'na Meditsina (Ukrains'kii institut eksperimental'noi meditsini). Kiev
Med. Klin.	Medizinische Klinik. Berlin

Med. Rec.	Medical Record. New York (title varies)
Medd. Vetenskapsakad. Nobelinst.	Meddelanden från Svenska Vetenskapsakademiens Nobelinstitut. Stockholm. (Discontinued) (Title varies slightly)
Mehl u. Brot	Mehl und Brot. Berlin
Melliand Textilber.	Melliand Textilberichte (continues Melliand's Textilberichte). Heidelberg. (Superseding Textilberichte über Wissenschaft, Industrie und Handel)(Subtitle varies)
Mem.Cornell Univ.Agr. Expt. Sta.	Memoir Cornell University Agricultural Experiment Station. Ithaca
Mikrobiol. Zhur.	Mikrobiologichnii Zhurnal. See J. Microbiol., Kiev
Mikrobiologiya	Mikrobiologiya; Microbiology; journal of general, agricultural and industrial microbiology. Leningrad <u>and</u> Moscow. (In Russian with Eng. and Ger. summaries)
Mikrochemie	Mikrochemie. Vienna. (Subtitle varies)(In Ger., Eng. and Italian with Ger., Eng. and Fr. summaries)
Mikrochemie Festschr. Fritz Pregl	Mikrochemie. Festschrift zum 60. Geburtstag von ... Fritz Pregl. Vienna: 340 pp (1929)
Mikrochemie Festschr. Hans Molisch	Mikrochemie. Festschrift zum 80. Geburtstag von ... Hans Molisch. Vienna and Leipsic: 454 pp (1936)
Mikrokosmos	Mikrokosmos. Stuttgart
Milchwirtschaft.Forsch.	Milchwirtschaftliche Forschungen. Berlin
Milchwirtsch. Weltkongress	Milchwirtschaftlicher Weltkongress. (11th congr. in Berlin)(9th congr. as Intern. Milchwirtsch. Kongr.)
Milchwirtschaft.Zentr.	Milchwirtschaftliches Zentralblatt. Neue Folge der Milch-Zeitung und ihrer wissenschaftlichen Beilage. Hanover
Milk Plant Mo.	Milk Plant Monthly. Chicago
Milk Trade Gaz.	Milk Trade Gazette. London

Mitt.deut.Landw.Ges.	Mitteilungen der deutschen Landwirtschafts-Gesellschaft. Berlin. (Superseded by Mitteilungen für die Landwirtschaft)
Mitt.Lebensm.Hyg.	Mitteilungen aus dem Gebiete der Lebensmitteluntersuchung und Hygiene. Berne. (In Ger. or Fr.)
Mlékařské Listy	Mlékařské Listy. (Milk journal). Prague. (In Bohemian)
Mo.Agr.Expt.Sta. Res. Bull.	University of Missouri College of Agriculture, Agricultural Experiment Station Research Bulletin. Columbia
Mo.Bull.Agr.Intell.	Monthly Bulletin of Agricultural Intelligence and Plant Diseases. Rome. (Superseded by Intern.Rev.Sci.Practice Agr.; superseded by International Review of Agriculture in 1927)
Modern Brewery Age	Modern Brewery Age. Chicago. (Merger of Brewery Age and Modern Brewer)
Monatsh.	Monatshefte für Chemie und verwandte Teile anderer Wissenschaften. Vienna
Monatsschr.Kinderheilk.	Monatsschrift für Kinderheilkunde. Berlin
Monit.sci.	Moniteur scientifique du Docteur Quesneville. Paris. (Discontinued in 1926)(Combined with Revue de chimie industrielle)
Mühlenlab.	Mühlenlaboratorium. Leipsic. (Suppl. to Die Muhle)
Munch.med.Wochschr.	Munchener medizinische Wochenschrift. Munich
Nachr.Ges.Wiss.Göttingen, math.phys.	Nachrichten von der Gesellschaft der Wissenschaften zu Göttingen. Mathematisch-physikalische Klasse
Nature	Nature. London
Nature, Paris	La Nature. Paris
Naturwissenschaften	Die Naturwissenschaften. Berlin

Natuurw. Tijdschr.	Natuurwetenschappelijk Tijdschrift (Natuuren geneeskundige Vennootschap.). Antwerp
Nauch.Zapiski Sakhar Prom.	Nauchnye Zapiski po sakharnoi Promyshlennosti (Vsesoiuznyi nauchno-issledovatel'skii institut sakharnoi promyshlennosti). Kiev. (Vols. 9-10, 1930-34, No. 36 as Naukovi Zapiski z Tsukrovoi Promyslovosti)
Nederland.Tijdschr. Hyg.Microbiol.Serol.	Nederlandsch Tijdschrift voor Hygiëne, Microbiologie et Serologie. Leyden. (Mostly in Dutch)(Superseded by Antonie van Leeuwenhoek in 1934)
New Engl.J.Med.	New England Journal of Medicine. Boston. (Superseding Boston Medical and Surgical Journal in 1928)
New Zealand J.Sci. Tech.	New Zealand Journal of Science and Technology. Section B: General section. Wellington
Nutrition Bull.Coll. Agr.Natl.Univ.Peiping	Nutrition Bulletin Department of Agricultural Chemistry, College of Agriculture, National University of Peiping. (Series B in Eng.)
Obst-Gemüse-Verwertungsind.	Obst- und Gemüse-Verwertungsindustrie (sub-title varies). Brunswick
Österr.Chem.Ztg.	Österreichische Chemiker-Zeitung. Vienna
Oesterr.-ung.Z. Zuckerind.	Oesterreichisch-ungarische Zeitschrift für Zuckerindustrie und Landwirtschaft. Vienna. (Discontinued in 1917?)
Oil Soap	Oil & Soap. Chicago
Okayama Igakkai-Zasshi	Okayama-Igakkai-Zasshi (Mitteilungen der medizinischen Gesellschaft zu Okayama). Okayama, Japan
Okla.A.M.Coll. Agr. Expt.Sta.Mim.Cir.	Oklahoma A. and M. College Agricultural Experiment Station Stillwater Mimeographed Circular
Onderstepoort J. Vet. Sci.	Onderstepoort Journal of Veterinary Science and Animal Industry. Pretoria

Orig. Commun. Intern. Congr. Appl. Chem.	Original Communications ... International Congress of Applied Chemistry. (9th in Washington and New York)
Pa. Agr. Expt. Sta. Bull.	Pennsylvania Agricultural Experiment Station Bulletin. State College
Papier-Fabr.	Der Papier-Fabrikant. Berlin
Papier Ztg.	Papier-Zeitung. Berlin
Papir J.	Papir-Journalen. Oslo
Pathologica	Pathologica. Genoa
Penna. Med. J.	Pennsylvania Medical Journal. Harrisburg. (1923-1928 as Atlanta Medical Journal)
Petit J. brasseur	Petit Journal du brasseur. Brussels
Pflüger's Arch. ges. Physiol.	Pflüger's Archiv. für die gesamte Physiologie des Menschen und der Tiere. Berlin. (Contin- uing Arch. ges. Physiol.)
Pharm. Acta Helv.	Pharmaceutica Acta Helvetica. Zurich. (Suppl. to Schweiz. Apoth. Ztg.)
Pharm. Franc.	Pharmacie Française. Paris
Pharm. J.	Pharmaceutical Journal. (Subtitle varies). London
Pharm. Post	Pharmazeutische Post. Vienna. (Superseded by Wiener pharmazeutische Wochenschrift in 1938)
Pharm. Presse	Pharmazeutische Presse. Vienna. (Includes suppl. Wissenschaftlich-technisches Heft) (Continued in its suppl. in 1933, and dis- continued in 1938)
Pharm. Weekblad	Pharmaceutisch Weekblad voor Nederland. Amsterdam. (Superseded by Pharmazeutisch Weekblad in 1940)
Pharm. Zentralh.	Pharmazeutische Zentralhalle für Deutschland. Dresden
Pharm. Ztg.	Pharmazeutische Zeitung. Berlin. (Discon- tinued in 1937)

Philippine J. Sci. . .	Philippine Journal of Science. Manila
Physiol. Abstr.	Physiological Abstracts. London. (Superseded by British Chemical and Physiological Abstracts. AIII. Physiology and biochemistry in 1938)
Pish. Prom. . .	Pishchevaya Promyshlennost SSSR. Narodnyi komissariat pishchevoi promyshlennosti SSSR. Moscow
Plant Physiol.	Plant Physiology. Lancaster, Pa.
Planta	Planta. Berlin. (Abt.E of Zeitschrift für wissenschaftliche Biologie)
Planter Sugar Mfr.	Planter and Sugar Manufacturer. New Orleans (Superseding La. Planter and Sugar Manufacturer)(Merged with Sugar into Facts about Sugar in 1930)
Poultry Sci.	Poultry Science. Menasha, Wis.
Praktika Akad.Athenon	Praktika tes Akademias Athenon (Akademia Athenon). Athens. (In Greek, Fr., or Ger.)
Prensa méd. mex.	Prensa médica mexicana. Mexico
Presse méd., Paris	Presse médicale. Paris
Printed Repts.Hawaiian Sugar Planters Assoc. Rept.Expt.Sta.	Printed Reports of the ... Annual Meeting of the Hawaiian Sugar Planters Association. Report of the Commission in Charge of the Experiment Station. Honolulu. (Superseding Proceedings in 1941)
Problems Animal Husbandry, Moscow	Problems of Animal Husbandry; Problemy Zhibotvodstva (Vsesoiuznyi nauchno-issledovatsl'skii institut zhivotnovodstva). Moscow
Proc.Acad.Sci.Amsterdam	Proceedings of the Royal Academy of Sciences of Amsterdam (K.Akademie van Wetenschappen). Amsterdam. (In Eng., Fr., Ger., or Dutch)
Proc.Am.Phil.Soc.	Proceedings of the American Philosophical Society. Philadelphia

- | | |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Proc..Asoc. tec.
azucar. Cuba | Proceedings of the ... Asociacion de técnicos
azucareros de Cuba. Habana |
| Proc. Chem. Soc. | Proceedings of the Chemical Society. London |
| Proc.Food Conf.Inst.
Food Tech. | Proceedings of the ... Food conference of
the Institute of the Food Technologists.
(1st conf. in Chicago, Ill.). Champaign.
(Title of later Proceedings varies slightly) |
| Proc.Hawaiian Sugar
Planters Assoc.Rept.
Expt, Sta. | Proceedings of the ... Annual Meeting of the
Hawaiian Sugar Planters' Association. Report
of the Commission in Charge of the Experiment
Station. Honolulu. (Superseded by Printed
Repts. in 1941) |
| Proc.Imp.Acad.Tokyo | Proceedings of the Imperial Academy. Tokyo.
(In Eng., Fr., or Ger.) |
| Proc.Indian Acad.Sci. | Proceedings of the Indian Academy of Sciences.
Bangalore |
| Proc.Inst.Sci.Res.
Food Ind., Leningrad | Proceedings of the Institute for Scientific
Research in Food Industry (Nauchno-
Issledovatel'skii Institut Pishchevoi
Promyshlennosti). Leningrad. (In Russian
with translated summaries) |
| Proc.Intern. Conf.
Flour Bread Manuf. | Proceedings of the International Conference
on Flour and Bread Manufacture. (1st conf.
in Prague) |
| Proc.Iowa Acad.Sci. | Proceedings of the Iowa Academy of Science.
Des Moines |
| Proc.Linn.Soc.
N.S. Wales | Proceedings of the Linnean Society of New
South Wales. Sidney |
| Proc.Natl.Acad.
Sci. U.S.A. | Proceedings of the National Academy of Sciences
of the United States of America. Washington |
| Proc.Roy.Soc.London | Proceedings of the Royal Society of London.
Series B. Biological Sciences |
| Proc.Sci.Inst.Vitamin
Res. USSR | Proceedings of the Scientific Institute for
Vitamin Research of the USSR; Trudy
Vsesoiuznyi nauchno-issledovatel'skii
vitaminnyi institut SSSR. Leningrad |

Proc. Soc. Biol. Chemists India	Proceedings of the Society of Biological Chemists India. Bangalore
Proc. Soc. Exptl. Biol. Med.	Proceedings of the Society for Experimental Biology and Medicine. New York
Proc. Sugar Tech. Assoc. India	Proceedings of the Sugar Technologists' Association of India. Cawnpore
Protoplasma	Protoplasma. Berlin
Przemysl Chem.	Przemysl Chemiczny. Warsaw
Pub. Health Repts. U.S. Pub. Health Serv.	Treasury Department Public Health Reports, United States Public Health Service. Washington
Pure Products	Pure Products. New York (Discontinued in 1921)
Quaderni nutriz.	Quaderni della nutrizione. Bologna
Quart. J. Indian Chem. Soc.	Quarterly Journal of the Indian Chemical Society. Calcutta. (Superseded by the Soc's. Journal in 1928)
Quart. J. Med.	Quarterly Journal of Medicine. London
Quart J. Pharm. Pharmacol.	Quarterly Journal of Pharmacy and Pharmacology (subtitle varies). London
Rass. clin. terap. sci. affini	Rassegna di clinica terapia e scienze affini. Rome
Rec. trav. chim. Pays- Bas	Recueil des travaux chimiques des Pays-Bas (vols. 16-38, 1897-1919, adding "et de la Belgique"). Dordrecht
Rend. accad. Italia, fis. mat. nat.	Atti ... Rendiconti della reale accademia d'Italia ... della classe di scienze fisiche, matematiche e naturali. Rome. (Superseding Rend. accad. Lincei, fis. mat. nat. in 1939)
Rend. accad Lincei, fis. mat. nat.	Atti ... Rendiconti della reale accademia dei Lincei, Classe di scienze fisiche, matematiche e naturali. Rome. (Title varies slightly)
Rend. accad. sci. Bologna, fis.	Rendiconti delle sessioni della r. accademia delle scienze dell' Istituto di Bologna. Classe di scienze fisiche

Rend. ist. sanità publ.	Rendiconti istituto di sanità pubblica. Rome
Rept. Central Lab. S. Manchuria Ry. Co.	Report of the Central Laboratory. South Manchuria Railway Company. Dairen. (In Japanese)
Rept. Hawaii Agr. Expt. Sta.	Report of the Hawaii Agricultural Experiment Station. Honolulu
Rept. Sugar Expt. Sta. Tainan	Report of the Government Sugar Experiment Station, Tainan, Formosa. (Eng. resumes)
Res. Bull. Agr. Expt. Sta. Iowa	Research Bulletin Agricultural Experiment Station Iowa State College of Agriculture. Ames
Réunion Soc. Belge Biol.	Réunion de la Société Belge de Biologie (included in Compt. rend. soc. biol., which see)
Rev. chim. ind.	Revista de chimica industrial. Rio de Janeiro
Rev. cienc., Lima	Revista de ciencias (Facultad de ciencias biológicas, físicas i matemáticas de la universidad mayor de San Marcos). Lima
Rev. gén. chim.	Revue générale de chimie pure et appliquée. Paris. (Discontinued 1918)
Rev. gén. colloides	Revue générale des colloides. Paris. (Title varies slightly) (Merged into J. chim. phys. 1931)
Rev. hyg. med. prevent.	Revue d'Hygiene et de médecine préventive. Paris
Rev. ind. agr. Tucuman	Revista industrial y agricola de Tucumán. Tucuman, Argentina
Rev. pathol. comp. hyg. gén.	Revue de pathologie comparée et d'hygiène générale. Paris
Rev. prod. chim.	Revue des produits chimiques et l'actualité scientifique réunies. Paris
Rev. sud-americana endocrinol. inmunol. quimioterap.	Revista sud-americana de endocrinologia, inmunologia, quimioterapia. Buenos Aires.
Rev. vit.	Revue de viticulture. Paris

Rif. Médica	Riforma Médica. Naples
Riv. biol.	Rivista di biologia. Perugia, Italy
S. Afr. J. Sci.	South African Journal of Science. Johannesburg
Sanit. Rec.	Sanitary Record (subtitle varies). London (Superseded by Municipal Engineering and Sanitary Record; superseded by Municipal Engineering, Sanitary Record and Municipal Motor)
Schrift.zentr.biochem. Forsch.Inst.Nahr.-Ge- nussmittelind. USSR	Schriften des zentralen biochemischen Forschungs-Instituts der Nahrungs- und Genussmittelindustrie USSR; Trudy Tsentral'- nogo Nauchno-Issledovatel'skogo Biokhimicheskogo Instituta Pishchevoi i Vkusovoi Promyshlennosti Narkomsnaba Soyuza SSR. Moscow. (In Russian with German summaries) Superseded by Schriften des zentralen Forschungs-Instituts der Lebensmittelchemie USSR; Trudy Tsentral'nogo Nauchno-Issledovatel'skogo Instituta Khimii Pishchevykh Sredstv Narkomsnaba SSSR in 1933; discontinued 1935?)
Schweiz.Apoth.Ztg.	Schweizerische Apotheker-Zeitung. Zurich. (Continuing Schweizerische Wochenschrift für Chemie und Pharmacie in 1914)
Schweiz.Brau.Rundschau	Schweizer-Brauerei Rundschau. Ceres Verlag, Postfach Zurich 2, Switzerland
Schweiz. Chem. Ztg.	Schweizerische Chemiker-Zeitung. Zurich. (Superseded by Technik und Industrie und Schweizer Chemiker-Zeitung in 1923)
Schweiz.med.Wochschr.	Schweizerische medizinische Wochenschrift. Basel
Sci. Agr.	Scientific Agriculture. Ottawa
Sci.Pap.Inst.Phys. Chem.Res., Tokyo	Scientific Papers of the Institute of Physical and Chemical Research; Rikwagaku- kenkyu-jo iho. Tokyo. (In Eng. or Ger.)
Sci.Proc.Roy.Dublin Soc.	Scientific Proceedings of the Royal Dublin Society

Sci.Repts.Imp.Inst. Agr.Res.Pusa	Scientific Reports of the Imperial Institute of Agricultural Research Pusa (Govt. of India), Calcutta; New Delhi. (Superseded by Scientific Reports of the Imperial Agricultural Research Institute. New Delhi in 1939-40)
Sci.Repts.Tôhoku Imp.Univ.,biol.	Science Reports of the Tôhoku Imperial University. Fourth Series: Biology; Tôhoku teikoku daigaku. Sendai. (In English)
Science	Science (subtitle varies). Lancaster, Pa.
Science Progress	Science Progress (subtitle varies slightly). London
Sei-i-kwai Med. J.	Sei-i-kwai Medical Journal. Tokyo. (Each no. in 2 parts; Eng. and Japanese)(Superseded by Sei-i-kai Med. J. in 1935)
Seifenfabr.	Der Seifenfabrikant. Berlin. (Superseded by Zeitschrift der deutschen Oel- und Fettindustrie; discontinued in 1926)
Semana méd., Buenos Aires	Semana Médica. Buenos Aires
Sewage Works Eng.	Sewage Works Engineering and Municipal Sanitation. New York
Sewage Works J.	Sewage Works Journal. New York
Sitzber.Akad.Wiss. Wien,, math.nat., Abt.1	Sitzungsbericht der kaiserlichen Akademie der Wissenschaften in Wien. Mathematisch-naturwissenschaftliche Klasse. Abt. 1. Vienna. (With vol. 214, 1916, "kaiserlichen" is dropped)
Sitzber.preuss. Akad. Wiss.	Sitzungsberichte der Königl. preussischen Akademie der Wissenschaften. Berlin. (Beginning 1919 "Königl." is dropped) (Superseded by the academy's Jahrbuch in 1939)
Skand.Arch.Physiol.	Skandinavisches Archiv für Physiologie. Leipsic. (In Eng., Fr., or Ger.)(Superseded by Acta Physiol.Scand. in 1940)

Soc.intern.microbiol. Boll.sez.ital.	Società internazionale di microbiologia Bollettino della sezione italiana. Milan
Soft Wheat Millers Assoc.Bull.	Soft Wheat Millers Association Bulletin. Nashville
Soil Sci.	Soil Science. Baltimore
Soobshch. Biuro Chastn.Rast.	Soobshcheniya Biuro Chastnomu Rastenievodstvu; Mitteilungen des Bureau für speziellen Pflanzenbau am wissenschaftlichen Comité des Ministeriums für Landwirtschaft. Leningrad. (In Russian)
Southern Med. J.	Southern Medical Journal. Birmingham, Ala.
Sovet. Sakhar	Sovetskii Sakhar (Vsesoiuznoe ob"edinenie sakharnoi promyshlennosti). Moscow
Spiritovaya Prom.	Spiritovaya Promyshlennost. Moscow. (Super- seding Brodil'naya Prom.) (Superseded by Spirto-Vodochnaya Prom. in 1937)
Spirto-Vodochnaya Prom.	Spirto-Vodochnaya Promyshlennost. Moscow. (Merged into Pish.Prom. in 1941)
Stain Tech.	Stain Technology. Geneva, N. Y.
Staz. sper. agrar. ital.	Stazione sperimentali agrarie italiana (subtitle varies). Modena. (Discontinued in 1926)
Strahlentherapie	Strahlentherapie. Berlin
Stud.Inst.Divi Thomae	Studies of the Institutum Divi Thomae of the Athenaeum of Ohio). Cincinnati
"Sddeut. Apoth. Ztg.	"Sddeutsche Apotheker-Zeitung. Stuttgart
Sugar	Sugar; An English and Spanish technical journal devoted to the agriculture and manu- facture of sugar. Chicago; New York. (Merged into Facts about Sugar in 1930; resumed name of Sugar in 1941)
Sugar News	Sugar News (subtitle varies). Manila

Suomen kemistilehti	Suomen kemistilehti; Acta Chemica Fennica (Suomalaisten kemistien seura). Helsingfors. (With vol. 8, no. 2, 1935, Latin name is dropped) (Section B mostly in Eng.)
Surco, Madrid	Surco; Boletín del Consejo superior de cámaras oficiales agrícolas. Madrid
Surveyor	Surveyor and Municipal and County Engineer (subtitle varies). London
Svensk Kem. Tid.	Svensk Kemisk Tidskrift. Stockholm. (In Swed. and Ger.)
Svensk Papperstidn.	Svensk Papperstidning. Stockholm
Svenska Bryggarefören. Månadsbl.	Svenska Bryggareföreningen Månadsblad. Stockholm
Tabulae biologicae	Tabulae biologicae (vols. 7-12, 1931-6, adding "periodicae"). The Hague
Tech. Bull. Mich. Agr. Expt. Sta.	Technical Bulletin Michigan Agricultural College Experiment Station. East Lansing
Tek. Tid., kemi	Teknisk Tidskrift. Stockholm. (Upplaga C: kemi)
Teknillinen Aikakaus- lehti	Teknillinen Aikakauslehti (Suomalainen teknikkojen seura). Helsingfors
Tids. Hermetikind.	Tidsskrift for Hermetikindustri (Norwegian Cannery Export Journal). Oslo
Tids. Kemi	Tidsskrift for Kemi, Farmaci og Terapi. Oslo
Tids. Kjemi Bergv.	Tidsskrift for Kjemi og Bergvesen. Oslo
Tôhoku J. Exptl. Med.	Tôhoku Journal of Experimental Medicine (Tôhoku teikoku daigaku). Sendai, Japan. (In Eng., Fr., or Ger.)
Trans. Am. Inst. Chem. Engrs.	Transactions of the American Institute of Chemical Engineers. Philadelphia
Trans. Am. Microscop. Soc.	Transactions of the American Microscopical Society. Menasha, Wis.
Trans. Dynamics Devel- opment, Moscow	Transactions on the Dynamics of Development; Trudy po Dinamike Razvitiya (Institut zhivotnovodstva). Moscow

- | | |
|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Trans.Intern.Chem.Eng.
Congr.World Power Conf. | Transactions of the International Chemical Engineering Congress of the World Power Conference. (1st congr. in London) |
| Trans. Roy. Soc. Can. | Transactions of the Royal Society of Canada. Ottawa. (Beginning 1914 in sections: III, mathematical, physical and chemical sciences; IV, biological sciences) |
| Trans. Tottori Soc.
Agr. Sci. | Transactions of the Tottori Society of Agricultural Science; Tottori Nogaku-Kwaiho. Tottori, Japan. (In Japanese, table of contents and bibliographies in Eng.) |
| Trav.lab.biogéochim.
acad. sci. URSS | Travaux du laboratoire biogéochimique de l'académie des sciences de l'URSS; Trudy Biogéokhimicheskoi Laboratorii Akademii Nauk SSSR. Leningrad. (In Fr. or Russian) |
| Trudy Lab.Izuch.Belka
Belkov.Obmena Org.
Vsesoyuz.Akad.Sel'sko
Khoz.Nauk Lenina | Trudy Laboratorii po Izucheniyu Belka i B lkovogo Obmena v Organizme (Vsesoyuznaya Akademiya Sel'sko Khozyaistvennykh Nauk imeni V.I. Lenina). Leningrad. (Ger. summaries in Arbeiten des Laboratoriums für Proteinforschung Referate (Lenin-Akademie für Landwirtschaftliche Wissenschaften). Leningrad |
| U.S. Bureau Animal
Ind., A.H.D. | United States Department of Agriculture. Bureau of Animal Industry. Animal Husbandry Division. Washington |
| U.S. Dept.Agr.Bur.
Chem.Bull. | United States Department of Agriculture Bureau of Chemistry Bulletin. Washington |
| U.S. Dept. Agr. Bur.
Chem.Cir. | United States Department of Agriculture Bureau of Chemistry Circular. Washington |
| Uchenya Zapiski Kazan.
Gosud.Zootekh.Vet.Inst.
Baumana | Uchenye Zapiski Kazanskogo Gosudarstvennyi Zootekhnicheskii veterinarnii Instituta im. N.E. Baumana. Kazan. (Superseding Uchenye Zapiski Kazan Veterinarnii Instituta) |
| Ukrain.Khem.Zhur. | Ukrains'kiĭ Khemichniĭ Zhurnal. Kharkov. (In Russian or Ukrainian) |

Umschau	Die Umschau (subtitle varies). Frankfurt a. M.
Univ. Calif. Publ. Physiol.	University of California Publications in Physiology. Berkeley
Univ. Colo. Stud.	University of Colorado Studies. Boulder
Věstník Českoslov. Akad. Zeměd.	Věstník Československé Akademie Zemědělské; Bulletin of the Czechoslovak Academy of Agriculture. (Československá Akademie Zemědělská). Prague. (In Bohemian, usually with Eng., Fr., or Ger. summaries)
Vie agr. rurale	La vie agricole et rurale. Paris
Vinodelie Vinogradarstvo	Vinodelie i Vinogradarstvo SSSR. Moscow
Virchows Arch. Path. Anat.	Virchows Archiv für pathologische Anatomie und Physiologie und klinische Medizin. Berlin
Vitamine Hormone	Vitamine und Hormone. Leipzig
Vom Wasser	Vom Wasser. Berlin
Voprosy Pitaniya	Voprosi Pitaniya (Problems of Nutrition) (Tsentral'niy Nauchniy Institut Pitaniya). Moscow. (In Russian with translated summaries) (Discontinued in 1941?)
Vorratspflege Lebensmittelforsch.	Vorratspflege und Lebensmittelforschung. Neudamm (Neumark) and Berlin
Wallerstein Labs. Commun.	Wallerstein Laboratories Communications. New York. (Superseding Commun. Sci. Pract. Brew. in 1939 (vol. <u>2</u> nos. 5-7, 1939, adding "on the science and practice of brewing")
Waseda Appl. Chem. Soc. Bull.	Waseda Applied Chemical Society Bulletin (Waseda University). Tokyo. (In Japanese with Eng. summaries)
Water Works Sewage	Water Works and Sewerage. Chicago
Wein u. Rebe	Wein und Rebe. Mainz

Wien.klin.Wochschr.	Wiener klinische Wochenschrift. Vienna
Wien. landw. Ztg.	Wiener landwirtschaftliche Zeitung. Vienna
Wochbl. Papierfabr.	Wochenblatt für Papierfabrikation. (Verein deutscher Papierfabrikanten). Biberach a.d. Riss
Wochschr. Brau.	Wochenschrift für Brauerei. Berlin
Z. angew. Chem.	Zeitschrift für angewandte Chemie. Leipsic. (Superseded by Angew. Chem.; superseded by Die Chemie in 1942)
Z. Biol.	Zeitschrift für Biologie. Munich
Z. Gärungsphysiol.	Zeitschrift für Gärungsphysiologie. Berlin. (Superseded by Z. tech. Biol.; superseded by Chem. Zelle Gewebe; discontinued 1926)
Z. ges. Brauw.	Zeitschrift für das gesamte Brauwesen. Nürnberg
Z.ges.exptl.Med.	Zeitschrift für die gesamte experimentelle Medizin. Berlin
Z. ges. Getreidew.	Zeitschrift für das gesamte Getreidewesen. (Superseded by Zeitschrift für das gesamte Getreide- und Mühlenwesen; superseded by Z. ges.Getreide-Mühlen-Bäckereiw. 1933)
Z.ges.Getreide-Mühlen-Bäckereiw.	Zeitschrift für das gesamte Getreide- Mühlen- und Bäckereiwesen. Berlin
Z. ges. Mühlenw.	Zeitschrift für das gesamte Mühlenwesen. Frankfurt a.M. (Superseded by Zeitschrift für das gesamte Getreide- und Mühlenwesen; superseded by Z. ges. Getreide- Mühlen.-Bäckereiw. in 1933)
Z. Immunitätsforsch.	Zeitschrift für Immunitätsforschung und experimentelle Therapie. Jena
Z. Krebsforsch.	Zeitschrift für Krebsforschung. Berlin
Z. landw. Versuchsw. Oesterr.	Zeitschrift für das landwirtschaftliche Versuchswesen in Oesterreich. Vienna. (Beginning 1919 "Deutsch-Oesterreich")(Superseded by Fortschritte der Landwirtschaft; discontinued 1933)

- Z. med. Chem. Zeitschrift für medizinische Chemie.
Mecklenburg. (Discontinued 1928)
- Z. öffentl. Chem. Zeitschrift für öffentliche Chemie. Plauen
i.V. (Discontinued 1922)
- Z. phys. Chem. Zeitschrift für physikalische Chemie,
Stoichiometrie und Verwandtschaftslehre.
Leipsic. (Abteilung A, Chemische Thermodynamik.
Kinetik. Elektrochemie. Eigenschaftslehre,
beginning 1928, continues numbering)
- Z. physiol. Chem. Hoppe-Seyler's Zeitschrift für physiologische
Chemie, Berlin
- Z. Spiritusind. Zeitschrift für Spiritusindustrie (Subtitle
varies). Berlin
- Z. tech. Biol. Zeitschrift für technische Biologie. Leipsic.
"(Superseding Z. Garungsphysiol.) (Superseded
by Chem.Zelle Gewebe; discontinued 1926)
- Z. Tierernähr. Fut- Zeitschrift für Tierernährung und Fut-
termittelk. termittelkunde. Berlin. (Supersedes Landw.
Vers.-Sta. in 1938)
- Z. Untersuch. Lebensm. Zeitschrift für Untersuchung der Lebensmittel.
Berlin
- Z. Untersuch. Nahr.- Zeitschrift für Untersuchung der Nahrungs-
Genussm. und Genussmittel, sowie Gebrauchsgegenstände.
Berlin. (Superseded by Z. Untersuch.
Lebensm. 1926)
- Z. Ver. deut. Ing. Zeitschrift des Vereins, deutscher
Ingenieure. Berlin
- Z. Ver. deut. Zucker Ind. Zeitschrift des Vereins der deutschen
Zucker-Industrie. Berlin. (Superseded by
Z. Wirtschaftsgruppe Zuckerind. in 1935)
- Z. Vitaminforsch. Zeitschrift für Vitaminforschung. Berne.
(In Fr., Ger., Eng.; or in Italian with
translated summaries)

- Z. Volksernähr. Zeitschrift für Volksernährung (subtitle varies). Berlin. (Superseding Die Volksernährung in 1935)
- Z. Wirtschaftsgruppe Zuckerind. Zeitschrift der Wirtschaftsgruppe Zuckerindustrie. Berlin. (Superseding Z. Ver. deut. Zucker Ind.)
- Z. Züchtung, Reihe B Zeitschrift für Züchtung. Reihe B. Tierzüchtung und Zuchtungsbiologie einschliesslich Tierernährung. Berlin. (Superseded and preceded by Zeitschrift für Tierzüchtung und Zuchtungsbiologie)
- Z. Zuckerind. Böhmen Zeitschrift für die Zuckerindustrie in Böhmen. Prague. (Superseded by Z. Zuckerind. czechoslovak. Rep.)
- Z. Zuckerind. czechoslovak. Rep. Zeitschrift für die Zuckerindustrie der czechoslovakischen Republik. Prague. (Discontinued 1939) (Merged into Listy cukrovarnické)
- Zeměd. Arch. Zemědělský Archiv. Prague. (In Bohemian)
- Zentr. Bakt. Parasitenk., Abt. 1 Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten. Abt. 1. Medizinisch-hygienische Bakteriologie und tierische Parasitenkunde. Originale. Referate. Jena. (Before 1929 Centr. Bakt. Parasitenk.)
- Zentr. Bakt. Parasitenk., Abt. 2 Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten. Abt. 2. Allgemeine landwirtschaftlich-technische Bakteriologie, Gärungsphysiologie und Pflanzenpathologie. Jena. (Subtitle varies slightly) (Before 1929 Centr. Bakt. Parasitenk.)
- Zhur. èkspt. Biol. Med. Zhurnal èksperimental'noï Biologii i Meditsiny; Journal de biologie et de medecine experimentales. Moscow. (In Russian with Ger. summaries) (Superseded by Biol. Zhur.)
- Zprávy Ustavu Kvasneho Prumyslu Brne Zpravy Ustavu Kvasneho Prumyslu v Brne (Publications of the Institute of the Yeast Industry at Brunn). Brunn
- Zymologica Zymologica e chimica dei colloidi. Bologna. (Title varies slightly) (Superseded by Giorn. biol. applicata ind. chim.; superseded by Giorn. biol. ind. agr. aliment.; superseded by Boll. sci. facolta chim. ind. Bologna).







